

Missouri State Epidemiological Profile January 2017

MO Behavioral Health Epidemiology
Workgroup
(MO-BHEW)



Table of Contents

Table of Contents.....	2
Introduction	6
Key Substance Use Measures	8
Alcohol Consumption.....	9
Drinking Rates	9
Age of First Use	10
Per Capita Ethanol Consumption	11
Binge Drinking.....	12
Drinking and Pregnancy	14
Drinking and Driving.....	15
Alcohol Consequences	16
Traffic Crashes.....	16
Mortality Rates	17
Tobacco	19
Tobacco Rates	19
Daily Use	21
Age of First Use	23
Per Capita Cigarette Consumption	24
Smoking and Pregnancy.....	25
Tobacco Consequences.....	26
Mortality Rates	26
Prescription Drugs.....	29
Nonmedical Use of Pain Relievers in the Past Year	29
Prescription Drug-Related Mortality.....	30
Illicit Drugs	31
Marijuana	31
Other Illicit Drugs	32
Illicit Drug Consequences.....	33
Illicit Drug-Related Mortality	33

Crime	35
Illicit Drug Dependence or Misuse	36
Key Risk and Protective Factors aka Intervening Variables	37
Peer Engagement in the Problem Behavior	38
Perception of Harm	39
Law Enforcement	39
Availability	40
Perception of ‘wrongness’	41
Rebellious attitudes	41
Parental attitudes	42
School bonding.....	42
Key Mental Health Indicators	43
National Comparison	44
Missouri Youth	46
Treatment Data	47
Mortality Rates of Death due to Suicide	50
High Risk Subpopulations.....	51
LGBTQ	52
Substance Misuse Indicators	52
Mental Health Indicators	52
Veterans	53
Mental Health Indicators	60
Data Limitations and Gaps.....	63
Conclusions	65
List of Figures	66
List of Tables.....	68
Appendix A - Data Sources, Indicators and Selection Criteria.....	69
Data Sources	69
Data Selection	72
Mortality Data	73

Missouri Substance Use – Key Findings



Alcohol Use

50.9% of all Missourians aged 12 and older reported using alcohol in the past month while 25.1% reported binge drinking in the same time period time.

These numbers have remained relatively steady over the last decade; the binge rate is slightly higher than the national average.



Tobacco Use

28.1% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This is a number that remains well above the national average (21.1%).

Missouri has been higher than the national average for rate of deaths due to tobacco use for the last decade.



Marijuana Use

8.0% of all Missourians aged 12 and older reported using marijuana in the past month. This is a number that has increased slightly over the past few years and is equal to the national average.

Missouri has been higher than the national average for number of property crimes for the last decade. Rates for both Missouri and the US are trending downward.

Missouri Mental Health – Key Findings

Depression



Rates for adults having at least one major depression episode are typically higher in Missouri than nationally.

22.7% of Missouri youth said they were sad in the last month “often” or “always” while 13.5% said they felt hopeless about their future.



Suicide

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade, and the rate continues to climb.

9.9% of Missouri youth made a plan to commit suicide.



LGBTQ & Vets

Students who identify as LGBTQ are twice as likely as students identifying as straight to report having suicidal thoughts or feeling sad or depressed at least sometimes.

Although stable over time, suicide rates in Missouri among veterans are more than double those among civilians.



Introduction

Missouri is located in the Midwest. The geography of the state is largely rural, although over half of the population clusters around two metropolitan areas. Slightly over six million people make Missouri their home making it the 18th most populated state. 23.2% of the population is under 18 years old, 61.8% are between 19-64 and 15.0% are senior citizens. The population is primarily white (82.6%) with African Americans making up the second largest group (11.5%). Hispanics are a small group (3.9%) but growing. Less than 4% of the population is foreign born and approximately 1% of the households are limited English speaking.¹

11.6% of the adult population do not have a high school diploma while only 27.1% have graduated from a 4 year college. Over a third (36.4%) of the population aged 16 and older are not in the labor force. 15.6% of the households fall below the poverty level. The median household income is \$48,173. Approximately 1 in 5 (21.2%) spend at least a third of their income on housing.¹

The Missouri Department of Mental Health (DMH), Division of Behavioral Health (DBH) is the state authority responsible for developing and implementing a statewide response addressing the impact of substance use disorder on Missouri families and communities. Through collaborative efforts, DBH works with other state and local agencies to ensure that the response is comprehensive and appropriate. In the fall 2010, DBH submitted a request for a subcontract through Synectics to the Center for Substance Abuse Prevention (CSAP), a part of the Substance Abuse and Mental Health Services Administration (SAMHSA), to increase the epidemiological

¹ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF> U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

capacity of the state. The grant was funded and the Missouri Behavioral Health Epidemiology Workgroup (MO-BHEW) was formed. One of the products of the MO-BHEW is a State Epidemiological Profile. The first Profile was completed Spring 2011.

The State Epidemiological Profile provides an overview of the current data on substance use and mental health (where available) across the state, including subpopulation data where possible. In addition, it discusses some of the Risk and Protective Factor data that is available for the state. The profile ends with a discussion of what data gaps still need to be addressed and provides some final conclusions as to the condition of the state.

For the last 17 years, the Department of Mental Health has produced an annual Status Report with data on alcohol and drug use across the state. This report includes data from national surveys as well as some local data where available. This historical data collection, in combination with the indicators listed in the guidance document, led to the choice of indicators covered in this report.

The Missouri Health Epidemiology Workgroup (MO-BHEW) identified two high risk subpopulations with data on mental health and substance misuse: lesbian, gay, bisexual, transgender or queer (LGBTQ) individuals and veterans. While data on these subpopulations are difficult to find, what is available is presented in this report.

Key Substance Use Measures



Alcohol Consumption

Drinking Rates

In 2013-14, 50.9% of all Missourians aged 12 and older reported using alcohol in the past month. This is a number that has remained relatively steady over the last decade and is similar to the national average.

10.9% of Missourians aged 12-17 years reported drinking in the last month. This compares to 60.0% of 18-25 year olds and 54.1% in the 26+ age group.

Those in the 18-25-year-old age group are most likely to have reported drinking in the past month although the gap between the adult groups has been decreasing. Those aged 12-17 years continue a slight decrease in use in the previous month.

Figure 1: Estimated Past-Month Alcohol Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014

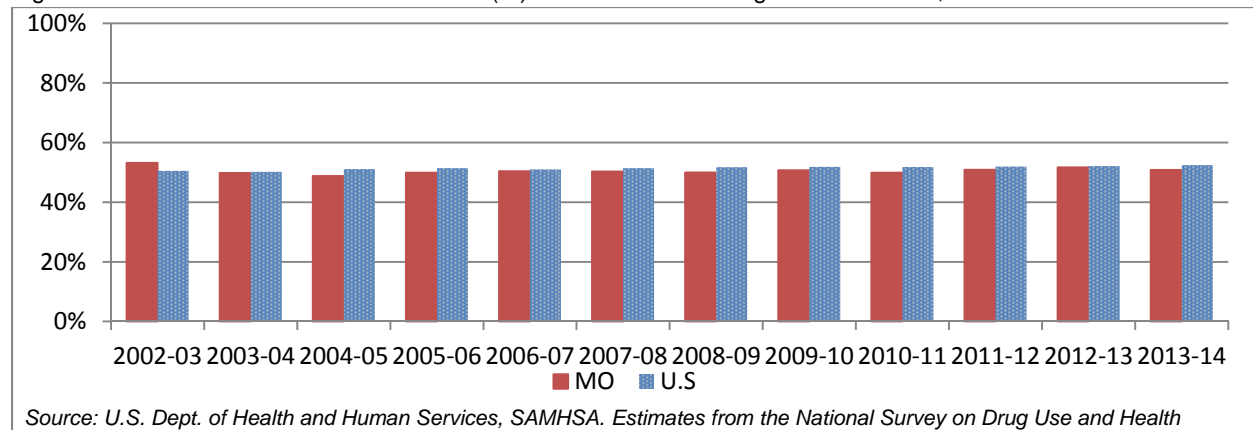
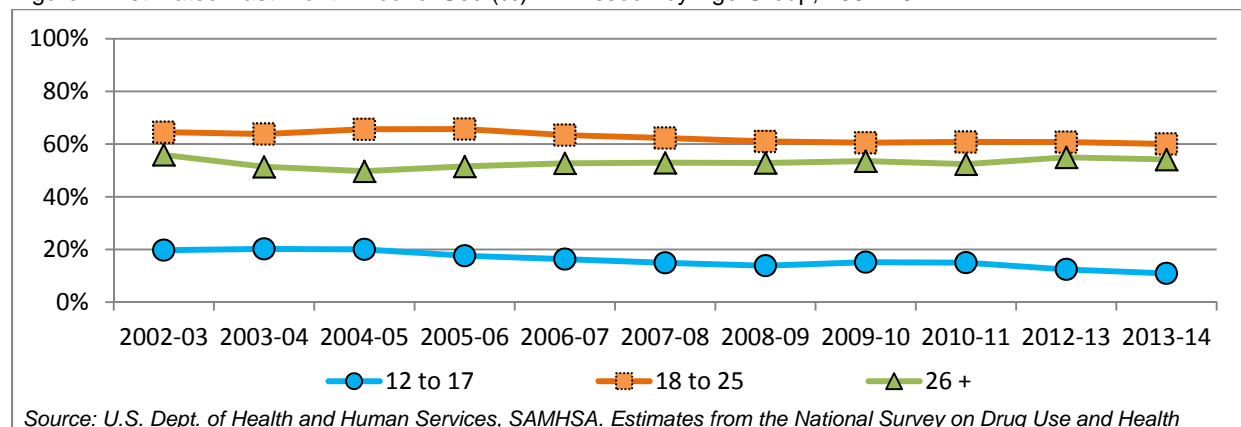


Figure 2: Estimated Past-Month Alcohol Use (%): In Missouri by Age Group, 2002-2014



Age of First Use

In 2015, less than one in five (17.3%) of all students currently in high school reported having their first drink of alcohol before the age of 13. This percentage has been decreasing over the last decade and is similar to the U.S average.

Males consistently report a higher percentage of drinking before age 13 than females. In 2015, the percentage of males initiating drinking before age 13 was 20.5% compared to 14.2% for females.

Missouri data for 2011 is not available.

Figure 3: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13, U.S. and Missouri, 1999-2015

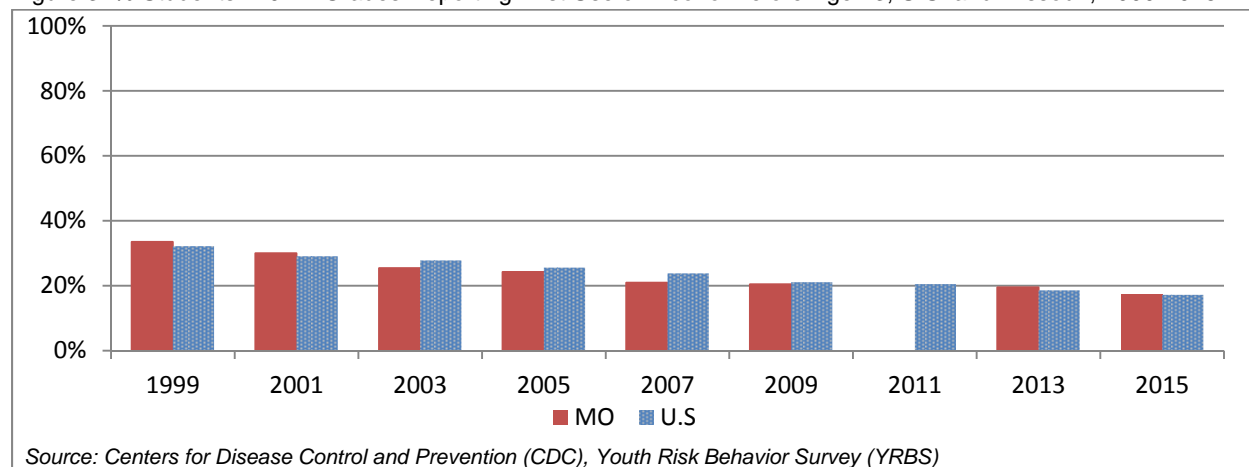
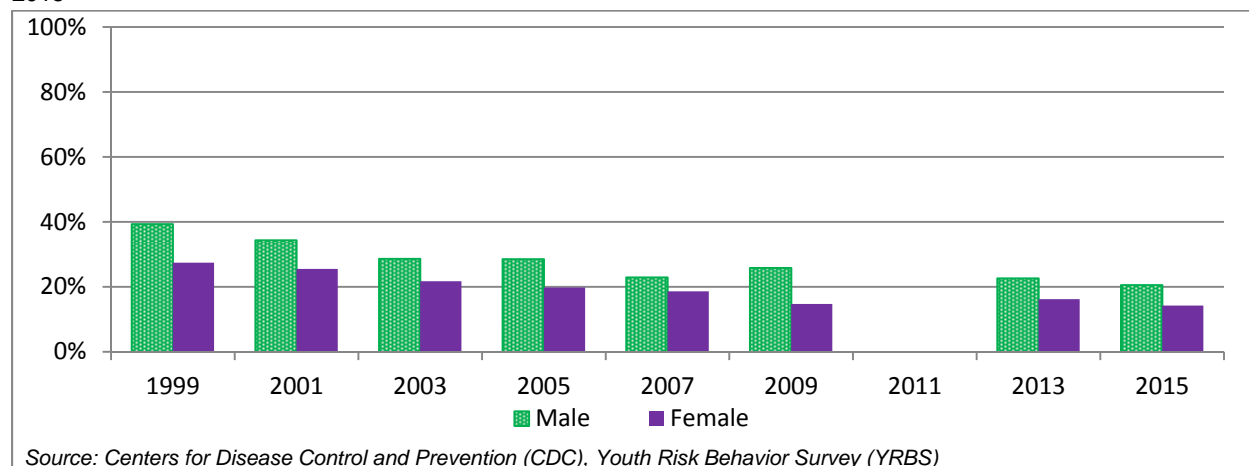


Figure 4: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13: In Missouri by Gender, 1999-2015



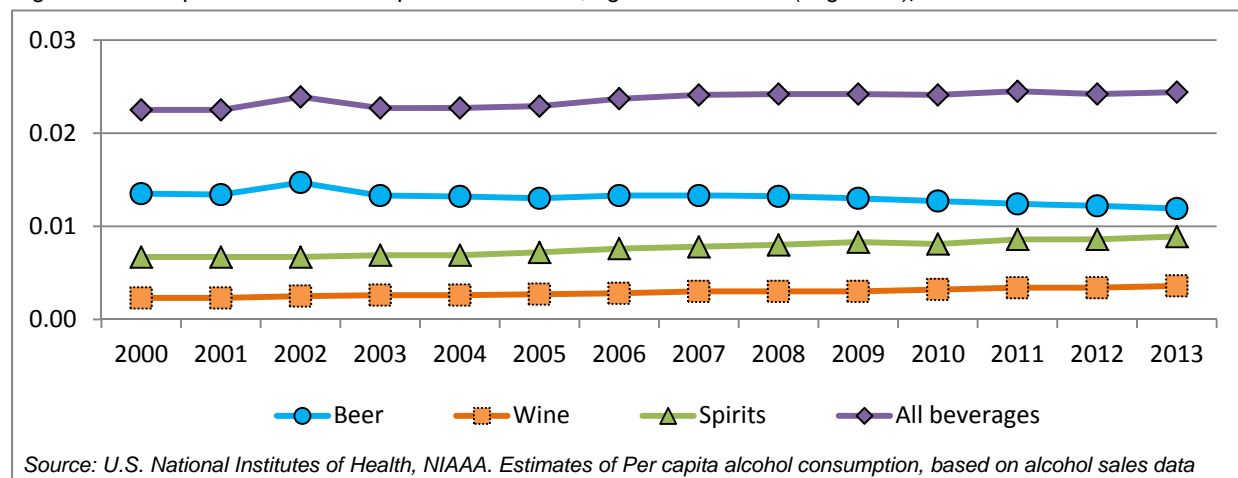
Per Capita Ethanol Consumption

Per Capita data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence.

The overall pattern of per capita ethanol consumption for Missouri is similar to that of the nation as a whole.²

Beer has the highest consumption rate for the state although the gap between that and wine / spirits has been decreasing.

Figure 5: Per capita ethanol consumption for Missouri, ages 14 and older (in gallons), 2000-2013



² <http://dmh.mo.gov/docs/ada/statusreport2015-c11.pdf>

Binge Drinking

In 2013-14, 25.1% of Missourians aged 12 and older reported binge drinking in the past month. This is slightly above the national average (22.9 %).

In 2013-14, 6.7% of Missourians aged 12-17 reported binge drinking in the last month. This compares to 41.3% of the 18-25 year olds and 24.6% in the 26+ age group.

As seen with overall drinking rates, those in the 18-25-year-old age group are also most likely to have reported binge drinking in the past month.

While this number had started to decrease since 2005, it slightly increased over the last 4 years. There is a decrease in reported binge drinking among people aged 12-17 year olds over the last decade.

Figure 6: Estimated Past-Month Binge Drinking (%): U.S. and Missouri Ages 12 and Older, 2002-2014

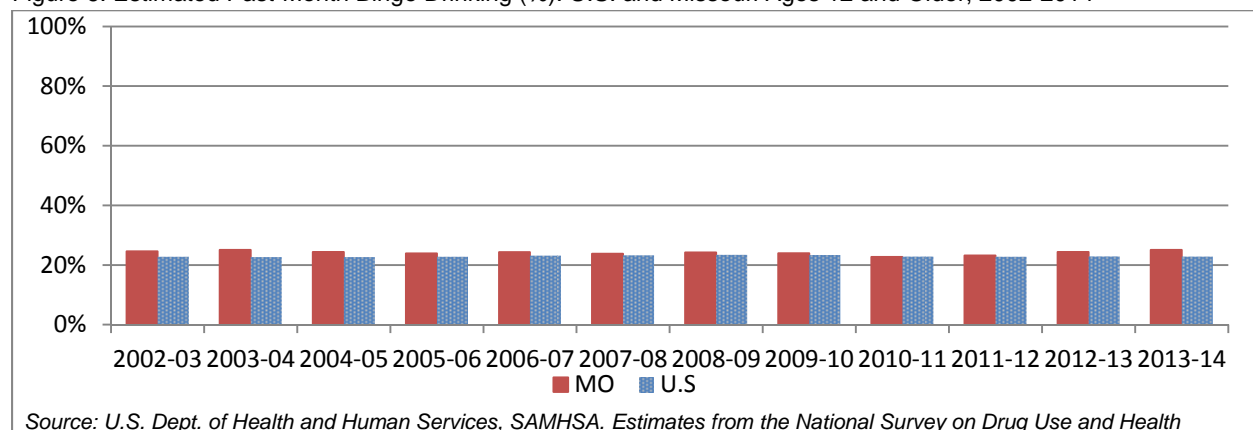
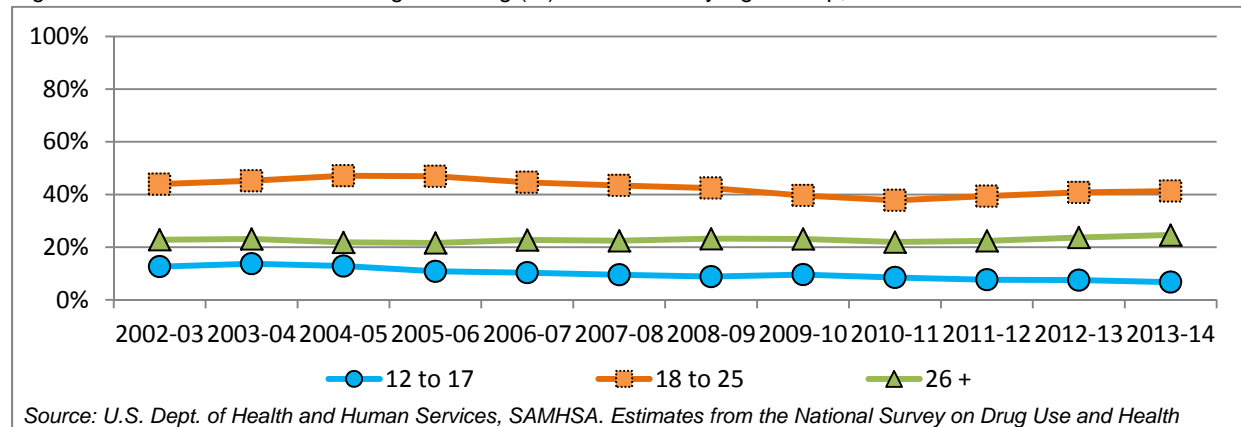


Figure 7: Estimated Past-Month Binge Drinking (%): In Missouri by Age Group, 2002-2014



- When comparing the percentage of people who reported any drinking to those who reported binge drinking, it becomes clear that binge drinking is a concern, especially in the younger age groups. Of those under 25 who reported drinking in the last 30 days, over half of them engaged in at least one session of binge drinking.

Table 1: Comparison of 30 Day and Binge Drinking in Missouri, 2013-2014

Age Group	% of Sample Reporting 30 day Use	% of Sample Reporting Binging in the last 30 days
12-17	10.9%	6.7%
18-25	60.0%	41.3%
26+	54.1%	24.6%

Source: U.S. Dept. of Health and Human Services, SAMHSA. Estimates from the National Survey on Drug Use and Health.

Drinking and Pregnancy

Prior reports have stated that PRAMS data are not available for Missouri. Instead they contained information from the Missouri Department of Health and Senior Services. However, in 2009 MDHSS stopped collecting these data.

PRAMS data began to be reported in 2007 (data not available for 2008) and so was chosen as a replacement for the DHSS data. However, these data have not been updated since 2011.

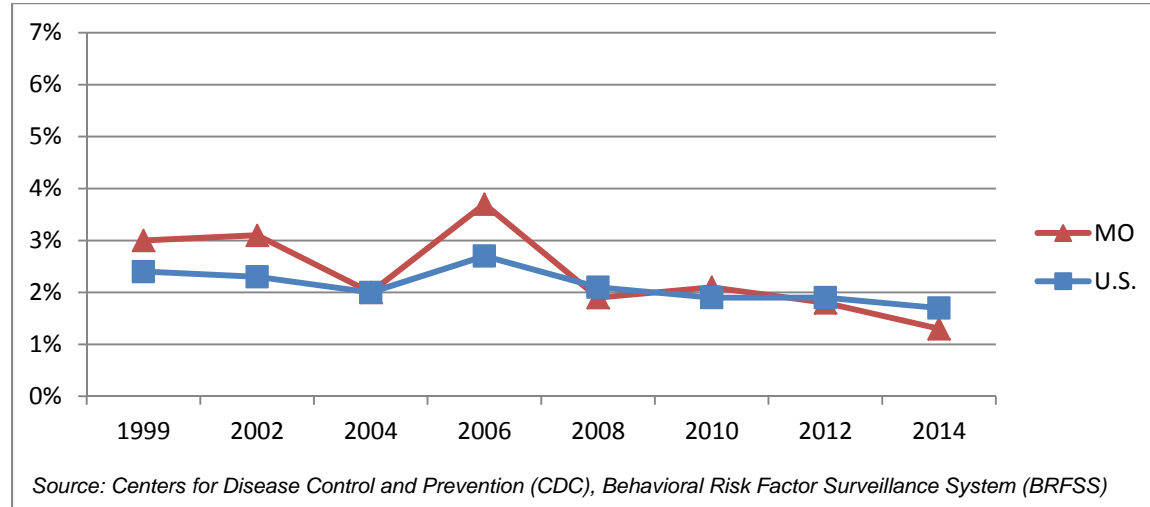
As the latest data available are now from 2011, this report does not have any new information to report on maternal drinking and pregnancy. See prior reports if older data are needed.

Drinking and Driving

1.3% of Missourians reported driving after drinking “perhaps too much” in 2012. Both the state and national numbers have been trending downward in the past several years.

Note the past report had some erroneous data reported due to an error in a federal querying system. Please use this report for the correct data; it obtains data from the original source.

Figure 8: % of Adults Aged 18+ Reporting Driving After Drinking “perhaps too much”: U.S. and Missouri., 1999-2012



Alcohol Consequences

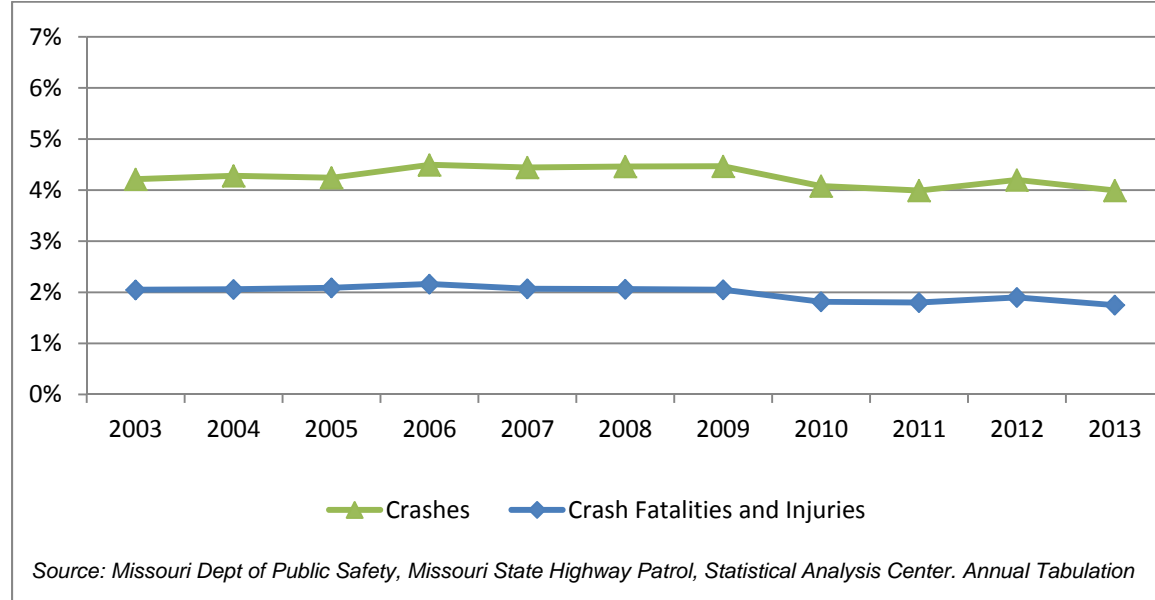
Traffic Crashes

Total traffic crashes in Missouri are on the decline, falling from 194,995 in 1998 to 139,061 in 2013.

The percentage of crashes that were caused by alcohol impaired drivers have remained somewhat stable over the last decade.

The percentage of crashes that were caused by alcohol impaired drivers that resulted in fatalities or injuries have remained mostly stable over the last decade.

Figure 9: % of Missouri Highway Safety Burden Caused by Alcohol Impaired Drivers, 2000-2013



Mortality Rates

Missouri has been lower than the national average for rate of deaths due to cirrhosis (chronic liver disease) for the last decade.

When looking at rates by demographics, men and Whites are more likely to die due to cirrhosis.

Figure 10: Rate of All Cirrhosis Deaths per 100,000 Population: U.S. and Missouri, 1998-2015

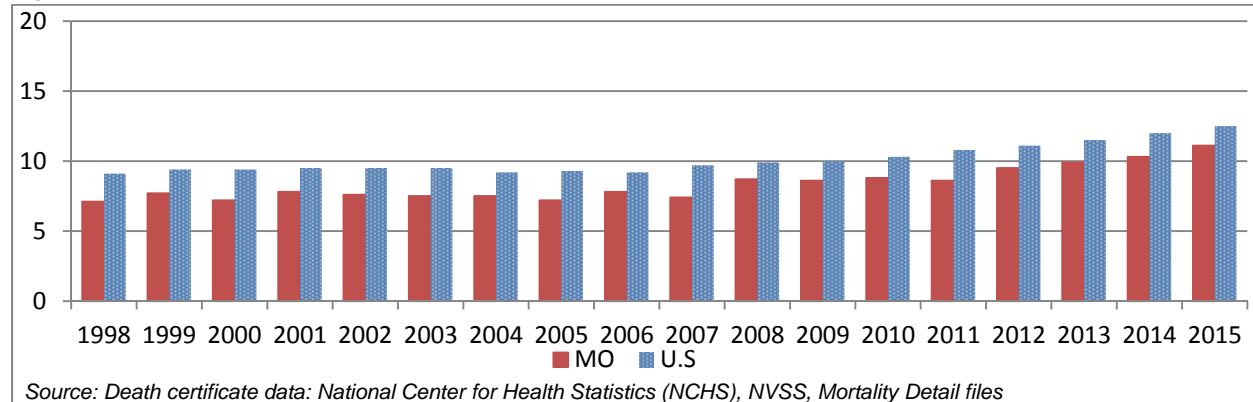
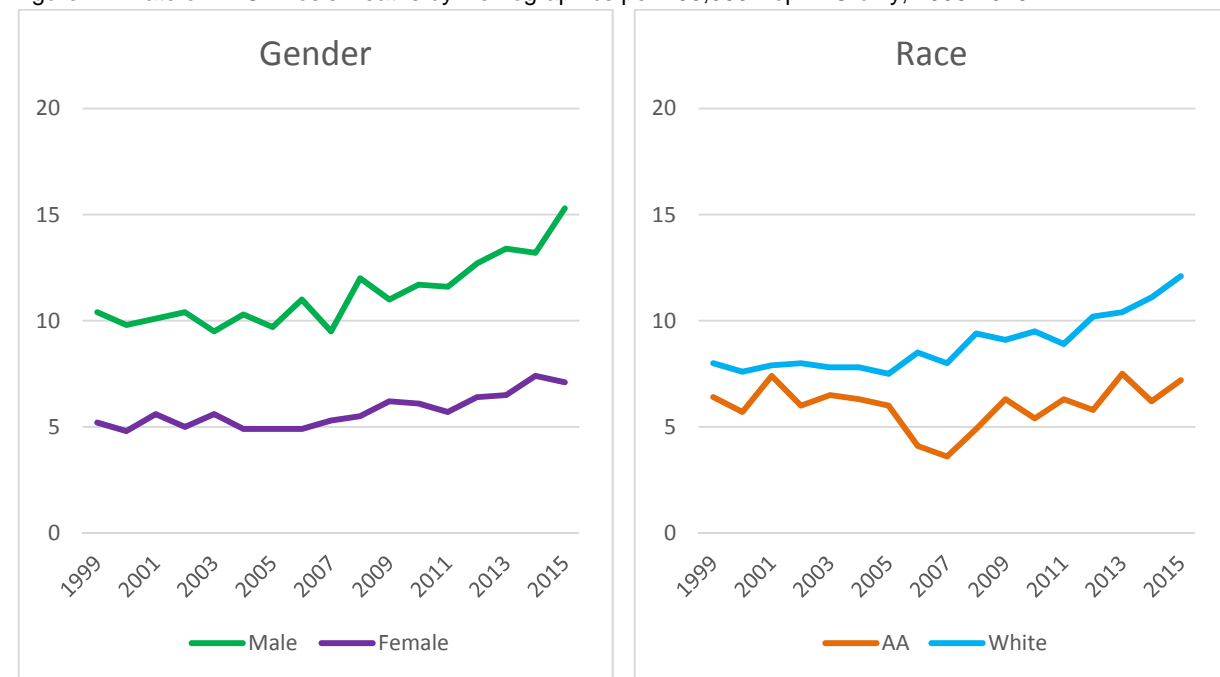


Figure 11: Rate of All Cirrhosis Deaths by Demographics per 100,000 Pop: MO only, 1998-2015



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Homicide rates have been higher than the national average for most of years in the last decade.

When looking at rates by demographics, men and African Americans are much more likely to die due to homicide.

Figure 12: Rate of Homicides per 100,000 Population: U.S. and Missouri, 1998-2015

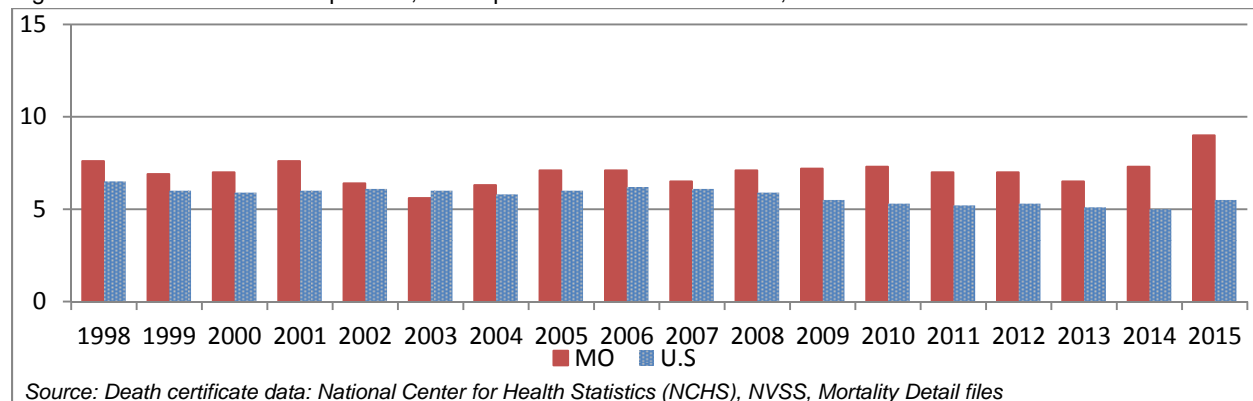
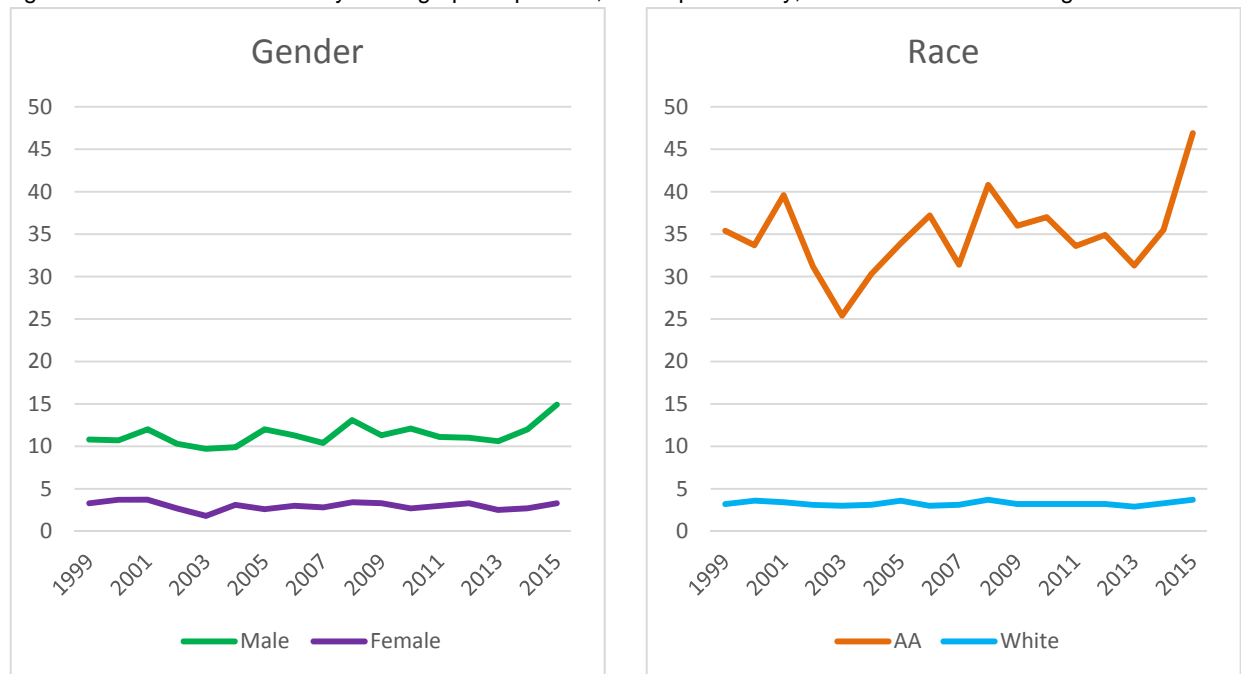


Figure 13: Rate of Homicides by Demographics per 100,000 Pop: MO only, 1998-2015 NOTE: Change in Scale



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Tobacco

Tobacco Rates

In 2013-14, 28.1% of all Missourians aged 12 and older reported smoking cigarettes in the past month. This is a number that remains well above the national average (21.1%).

In 2013-14, 8.1% of Missourians aged 12-17 years reported smoking cigarettes in the past month. This compares to 39.0% of 18-25 year olds and 28.7% in the 26+ age group.

Those aged 18-25-year-old are most likely to have reported smoking in the past month.

All age groups have decreased their use over the last decade, although use increased over the last two years for those 18 and over.

Figure 14: Estimated Past-Month Cigarette Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014

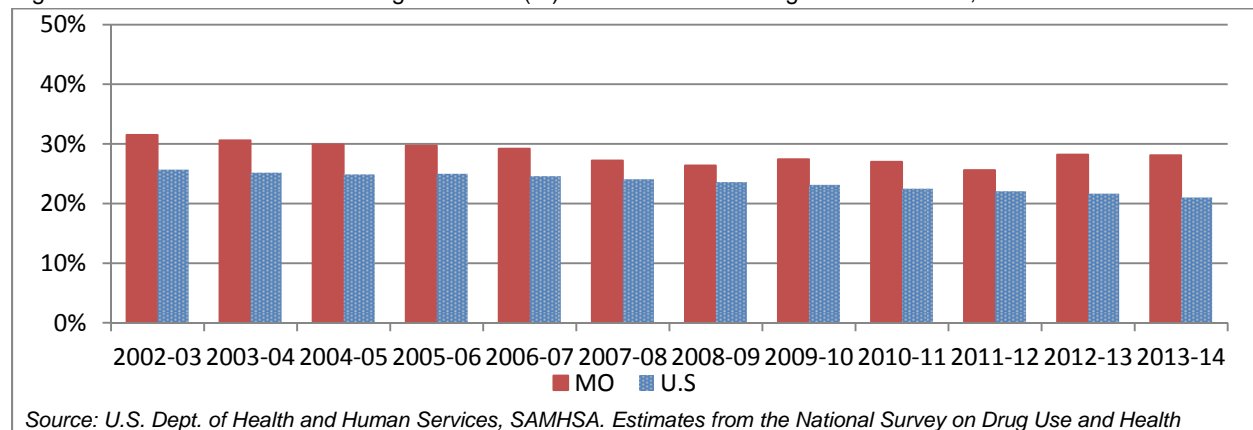
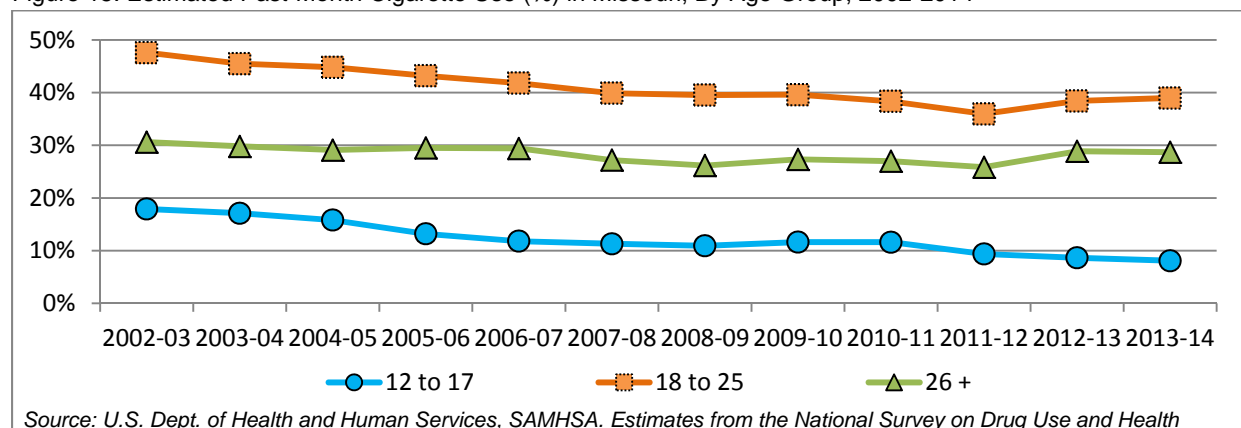


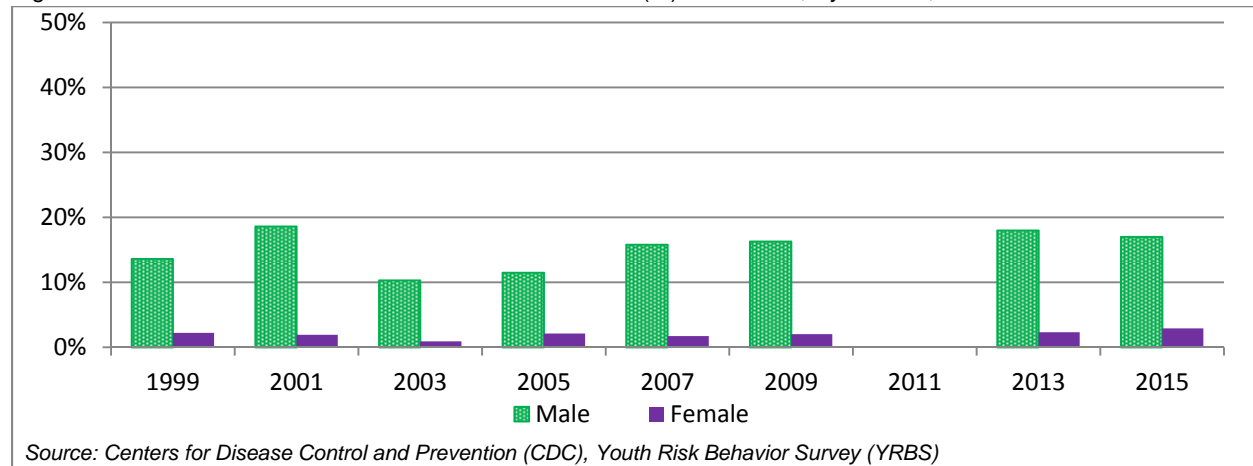
Figure 15: Estimated Past-Month Cigarette Use (%) in Missouri, By Age Group, 2002-2014



Males are much more likely to report using smokeless tobacco in the last month than females are.

Missouri data for 2011 are not available.

Figure 16: Estimated Past-Month Smokeless Tobacco Use (%) in Missouri, By Gender, 1999-2015



Daily Use

In 2012, 18.2% of all Missourians aged 18 and older reported using smoking cigarettes daily in the past month. This is a number that is above the national average of 13.5%.

Males were slightly more likely than females to report daily smoking.

Figure 17: Estimated Daily Cigarette Use (%): U.S. and Missouri Ages 18 and Older, 2002-2012

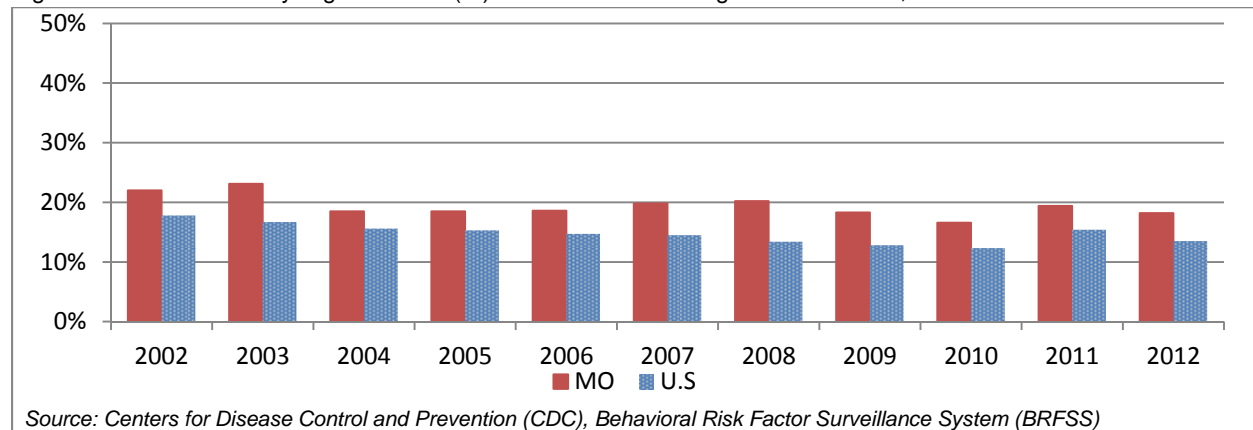
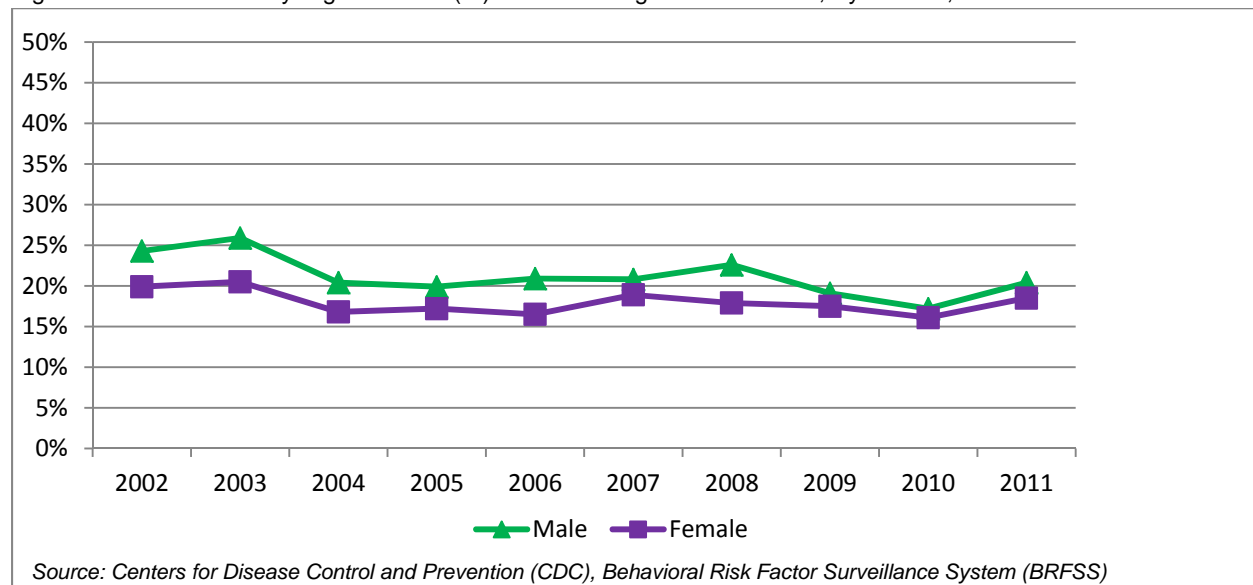


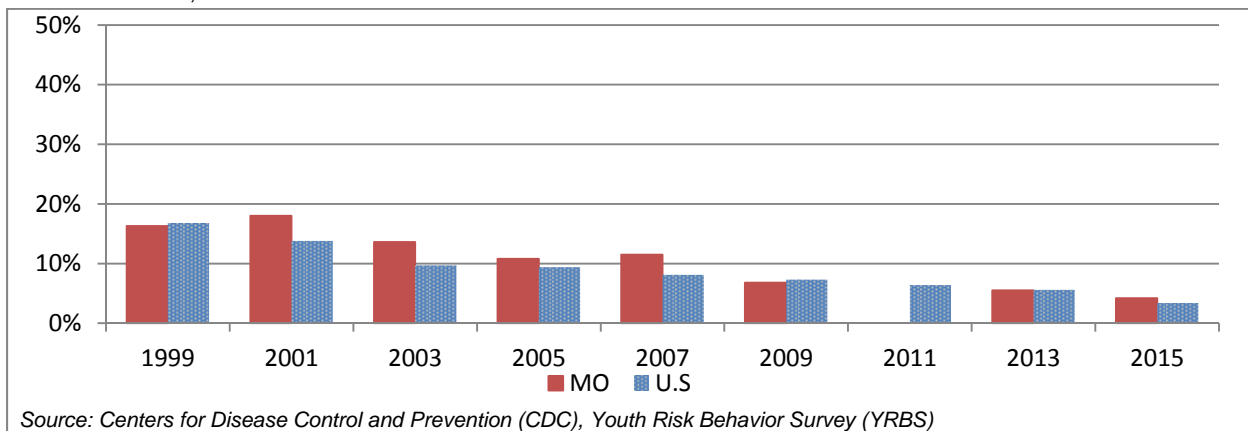
Figure 18: Estimated Daily Cigarette Use (%) in Missouri Ages 18 and Older, By Gender, 2002-2011



When looking at high school students only, Missouri is close to national average in the last few years.

Missouri data for 2011 are not available.

Figure 19: % of Students in 9-12 Grade Reporting Smoking Cigarettes on 20 or More Days within the Past 30 Days: U.S and Missouri, 1999-2015



Age of First Use

In 2015, 8.0% of all students currently in high school report using tobacco before the age of 13. This percentage has been decreasing over the last decade.

Males typically report a higher percentage of tobacco use before age 13 than females. In 2015, the male percentage was 8.0% compared to 5.0% for females.

Missouri data for 2011 are not available.

Figure 20: % Students in 9-12 Grades Reporting First Use of Tobacco Before Age 13, U.S. and Missouri, 1999-2015

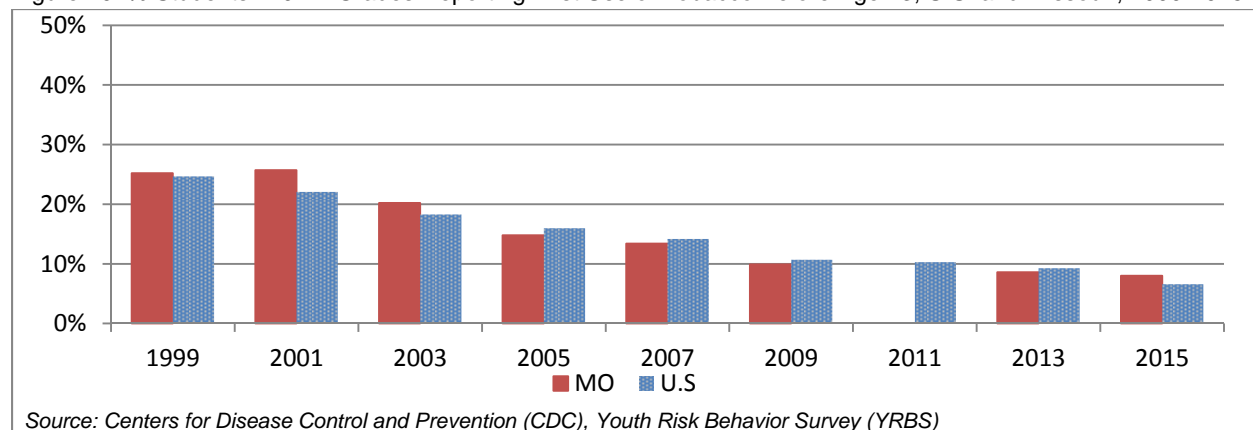
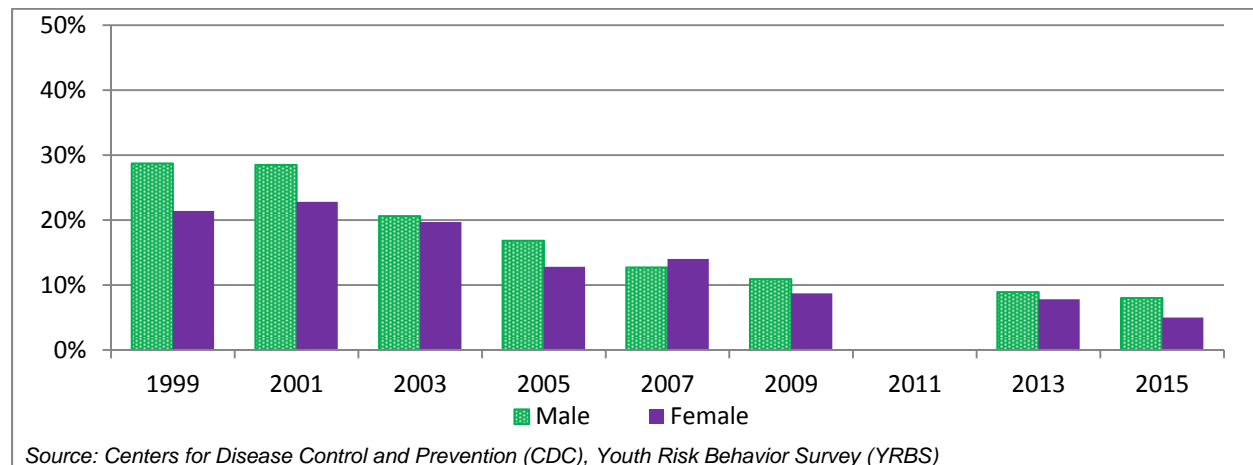


Figure 21: % Students in 9-12 Grades Reporting First Use of Cigarettes Before Age 13 in Missouri, By Gender, 1999-2015

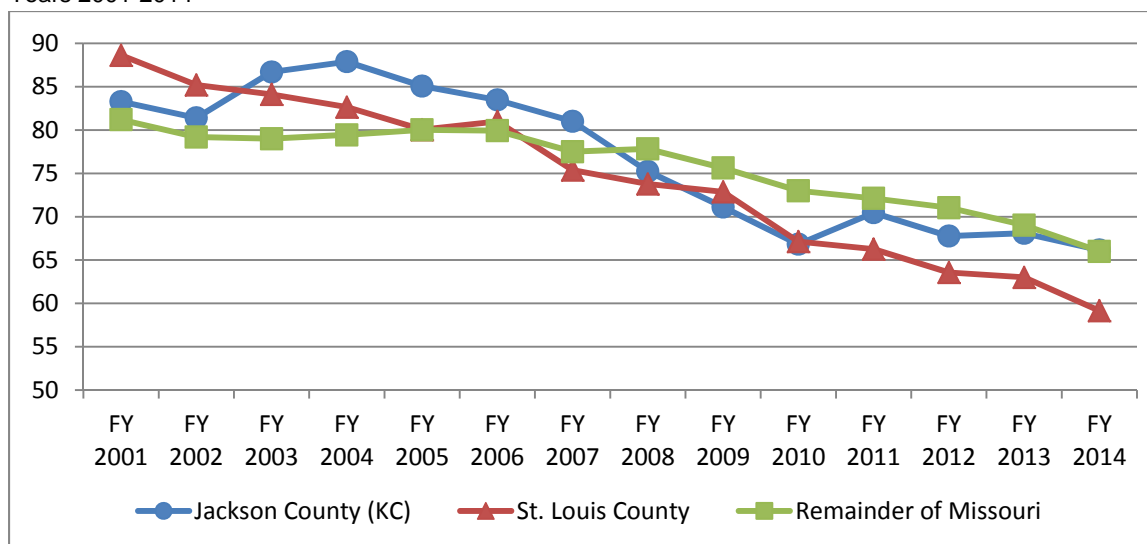


Per Capita Cigarette Consumption

Per Capita data should be interpreted cautiously – it may not be sensitive in identifying areas where a high prevalence of heavy use is also seen with high rates of abstinence.

Cigarettes sold per capita seem to indicate higher smoking rates in rural areas than in the major cities, although this number is declining. Jackson County rates have been similar to rural areas for the past several years.

Figure 22: Packs of Cigarettes Per Capita Sold in Missouri Based on Cigarette Tax Revenues, by county, Fiscal Years 2001-2014



Source: Missouri Department of Revenue. Annual revenue reports. Total cigarette sales estimates are based on the cigarette tax portion of tobacco tax receipts. Breakouts for Jackson County and St. Louis County are based on supplemental county cigarette tax receipts.

Smoking and Pregnancy

As discussed above in “Drinking and Pregnancy”, data for expectant mothers are not available.

Tobacco Consequences

Mortality Rates

Missouri has been higher than the national average for rate of deaths due to tobacco use (lung cancer, COPD and emphysema, and cardiovascular and ischemic cerebrovascular disease) for the last decade.

When looking at rates by demographics, men and whites are more likely to die due to lung cancer. White are also more likely to die due to COPD and emphysema and cardiovascular and ischemic cerebrovascular disease although there is not a strong difference between the genders.

Figure 23: Rate of Deaths from Lung Cancer per 100,000 Population: U.S. and MO, 1998-2015

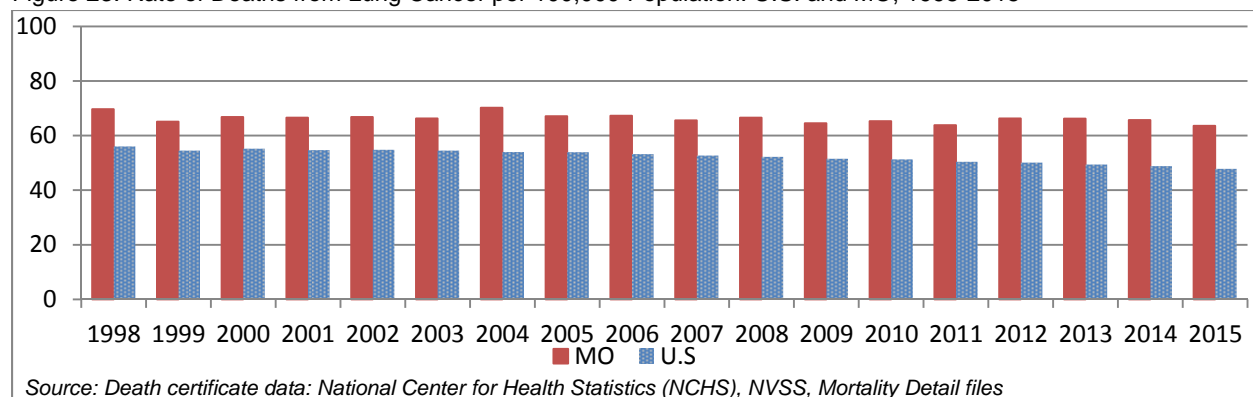
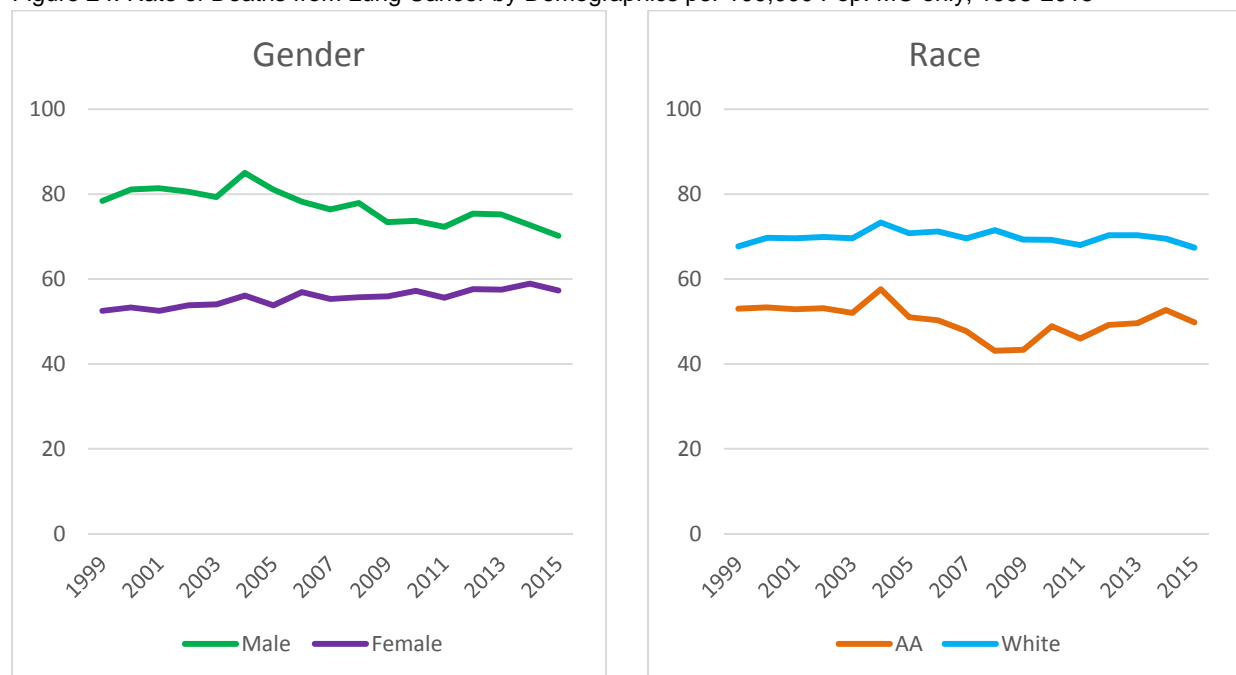


Figure 24: Rate of Deaths from Lung Cancer by Demographics per 100,000 Pop: MO only, 1998-2015



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Figure 25: Rate of Deaths from COPD and Emphysema per 100,000 Population: U.S. and MO, 1998-2015

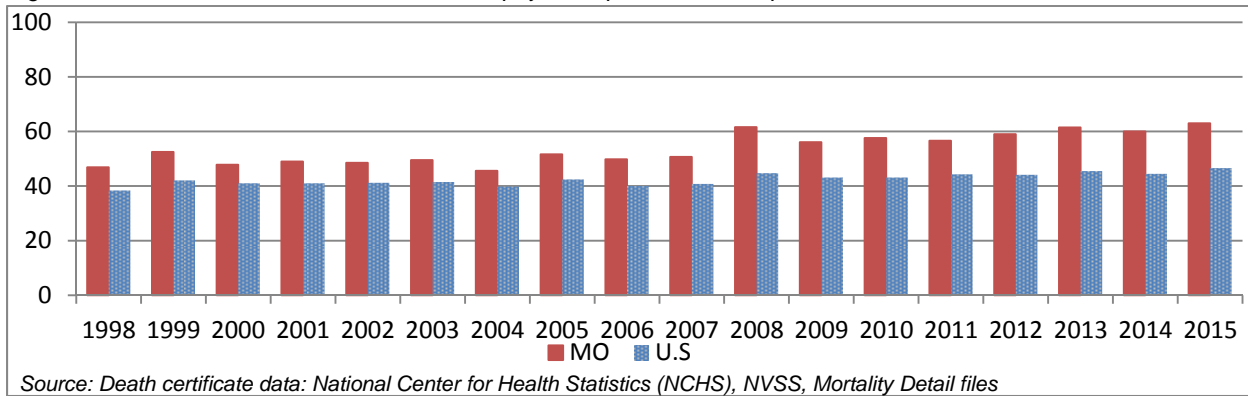
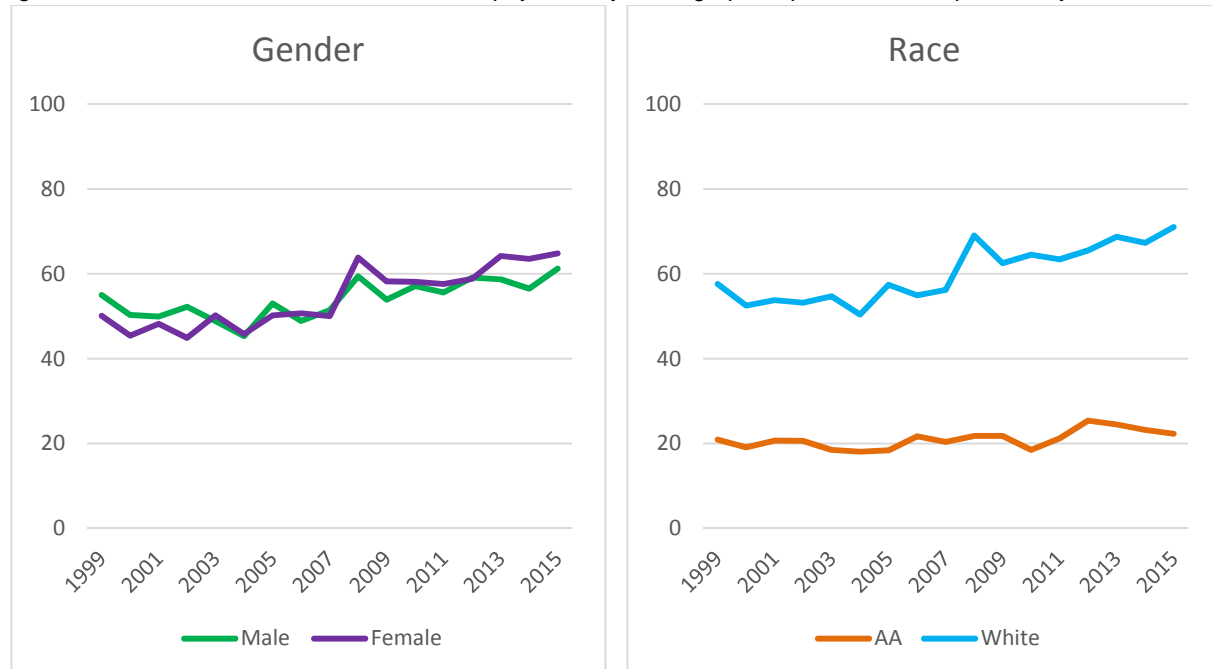


Figure 26: Rate of Deaths from COPD and Emphysema by Demographics per 100,000 Pop: MO only, 1998-2015



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Figure 27: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease per 100,000 Pop: U.S. and MO, 1998-2015 **NOTE: Scale has changed from prior two figures.**

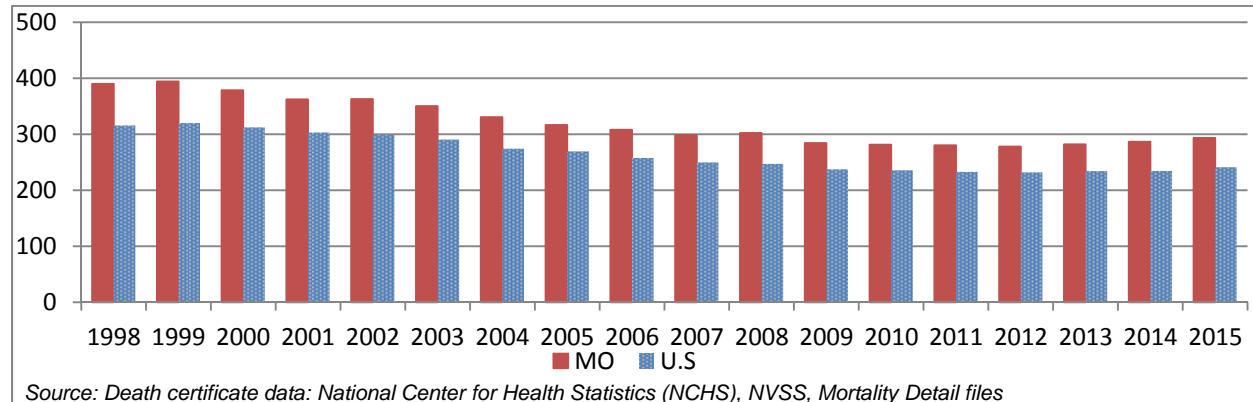
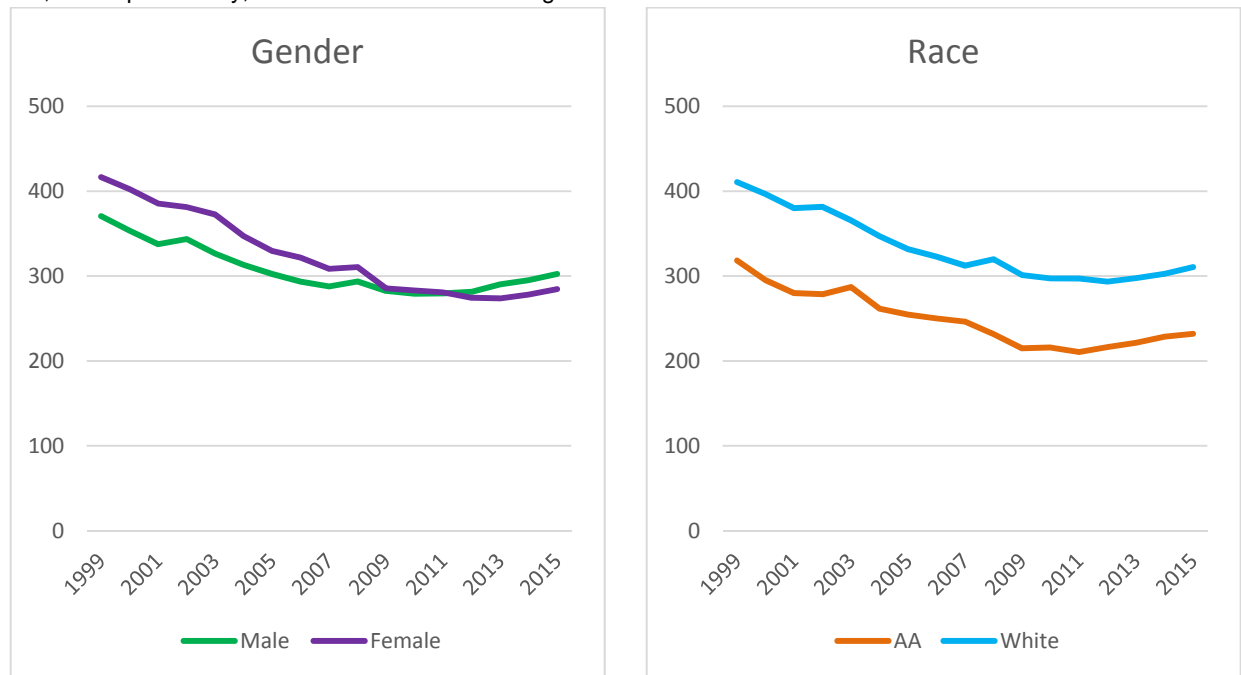


Figure 28: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease by Demographics per 100,000 Pop: MO only, 1998-2015 **NOTE: Change in Scale**



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Prescription Drugs

Nonmedical Use of Pain Relievers in the Past Year

In 2013-14, 4.0% of all Missourians aged 12 and older reported non-medical use of pain relievers in the past month. This is a number that has remained relatively steady over the last decade and is similar to the national average (4.1%).

4.4% of Missourians aged 12-17 years reported non-medical use of pain relievers in the past month. This compares to 9.3% of 18-25 year olds and 3.1% in the 26+ age group.

Those aged 18-25-year-olds are most likely to have reported non-medical use of pain relievers in the past month.

Figure 29: Estimated Past-Year Non-Medical Use of Pain Relievers (%): U.S. and Missouri Ages 12 and Older, 2002-2014

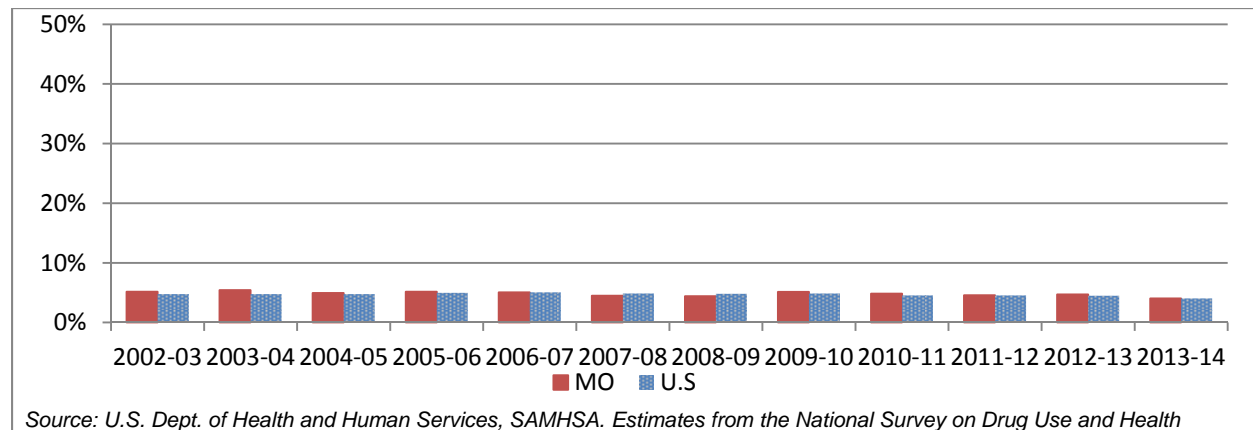
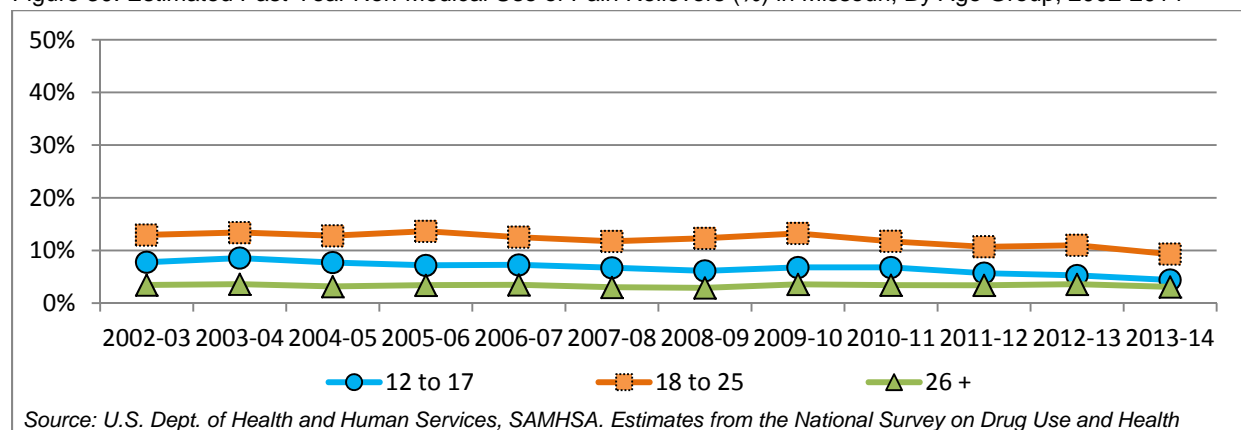


Figure 30: Estimated Past-Year Non-Medical Use of Pain Relievers (%) in Missouri, By Age Group, 2002-2014



Prescription Drug-Related Mortality

Missouri is consistently lower than the national average for rate of deaths due to prescription drugs; excluding a slight bump in 2002.

When looking at rates by demographics, men are more likely to die due to prescription drugs. The racial differences in deaths are slight and appear to vary by year.

Figure 31: Rate of Deaths from Prescription Drug per 100,000 Pop: U.S. and Missouri, 1998-2015

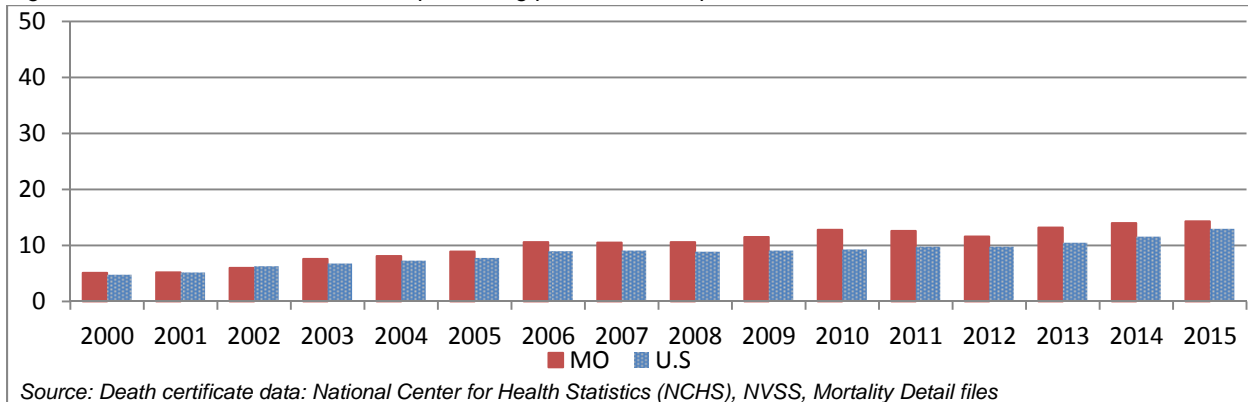
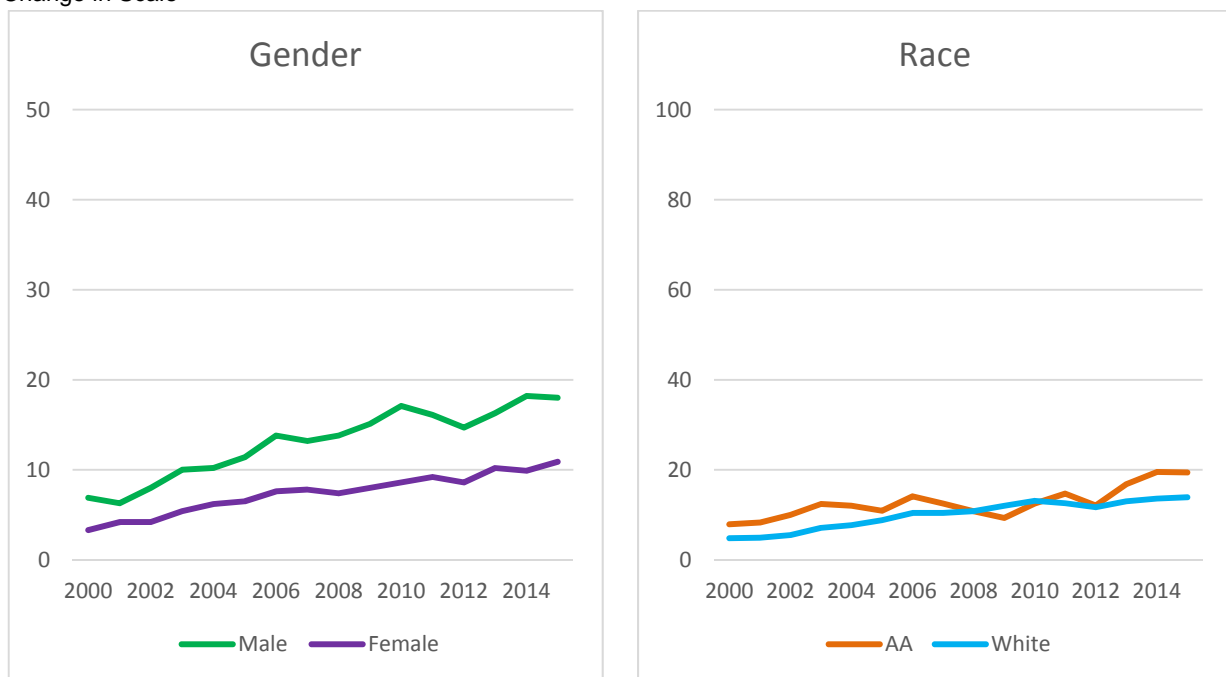


Figure 32: Rate of Deaths from Prescription Drug by Demographics per 100,000 Pop: MO only, 1998-2015 NOTE: Change in Scale



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Illicit Drugs

Marijuana

In 2013-14, 8.0% of all Missourians aged 12 and older reported using marijuana in the past month. This is a number that has increased slightly over the past few years and is equal to the national average.

6.5% of Missourians in the 12-17 age group reported smoking marijuana in the last month. This compares to 21.7% of 18-25 year olds and 5.9% in the 26+ age group.

Those in the 18-25-year-old age group are most likely to have used marijuana in the past month. Rates for the 18-25 and 26+ age groups increased slightly in the past year.

Data on students in 9-12 grades reporting first use of marijuana before age 13 have not been updated since 2009 and so were discontinued for this report. More current information for Missouri students and illicit drug use can be found in the Missouri Student Survey report (<http://dmh.mo.gov/ada/rpts/survey.html>).

Figure 33: Estimated Past-Month Marijuana Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014

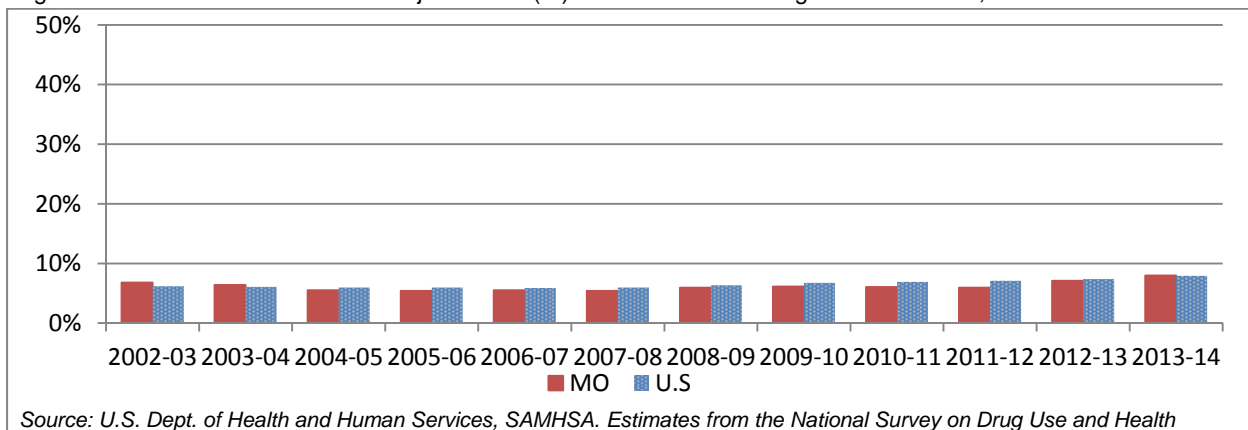
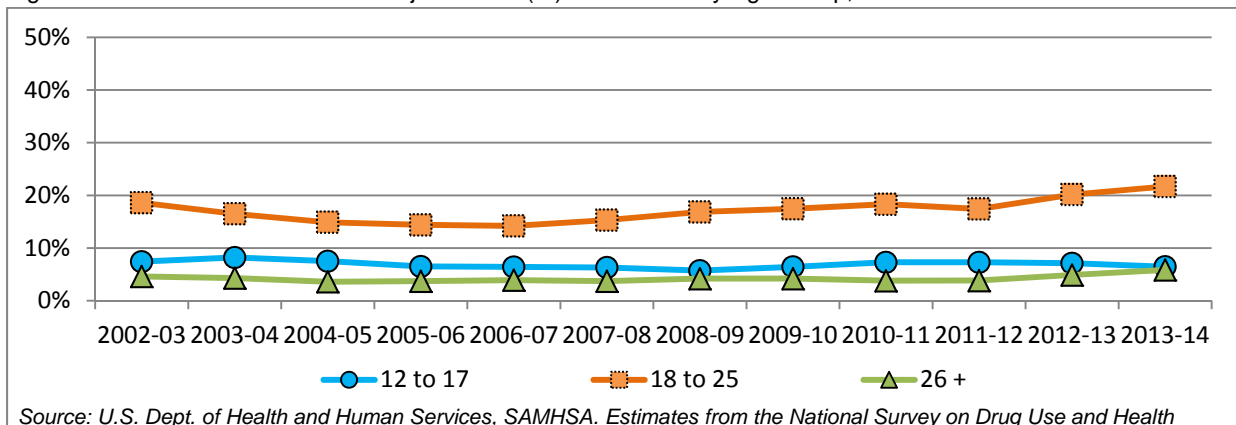


Figure 34: Estimated Past-Month Marijuana Use (%): In Missouri by Age Group, 2002-2014



Other Illicit Drugs

“Other illicit drugs” is defined as an illegal drug other than marijuana, or an abusable product that can be obtained legally, such as prescription drugs.

In 2013-14, 2.9% of all Missourians 12 and older reported using illicit drugs in the previous month. This is a number that has remained mostly stable over the last decade.

2.8% of Missourians in the 12-17 age group reported using illicit drugs in the past month, compared to 7.1% of 18-25 year olds and 2.2% in the 26+ age group.

Those in the 18-25-year-old age group are most likely to have reported using illicit drugs in the past month.

Data on students in 9-12 grades reporting illicit drug use have not been updated since 2009 and so were discontinued for this report. More current information for Missouri students and illicit drug use can be found in the Missouri Student Survey report (<http://dmh.mo.gov/ada/rpts/survey.html>).

Figure 35: Estimated Past-Month Other Illicit Drug Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014

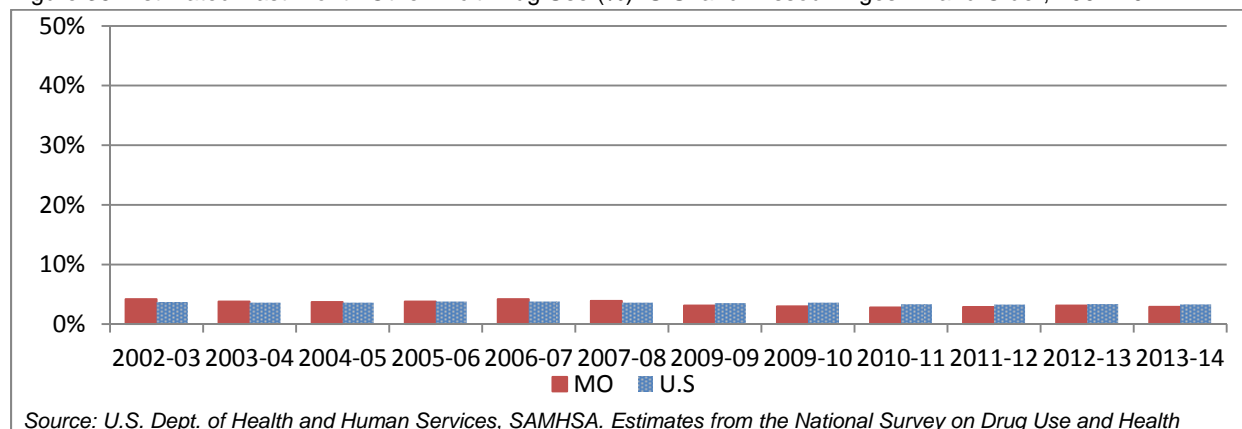
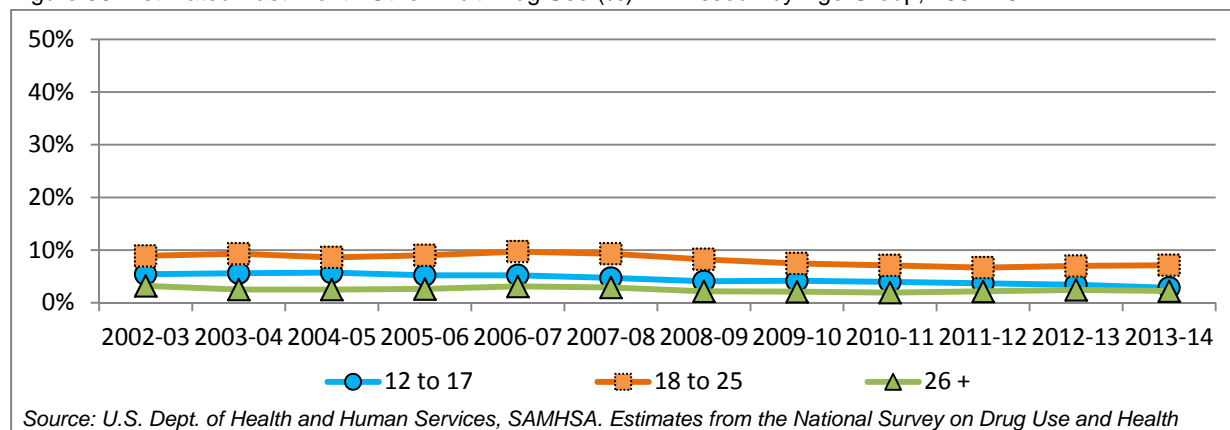


Figure 36: Estimated Past-Month Other Illicit Drug Use (%): In Missouri by Age Group, 2002-2014



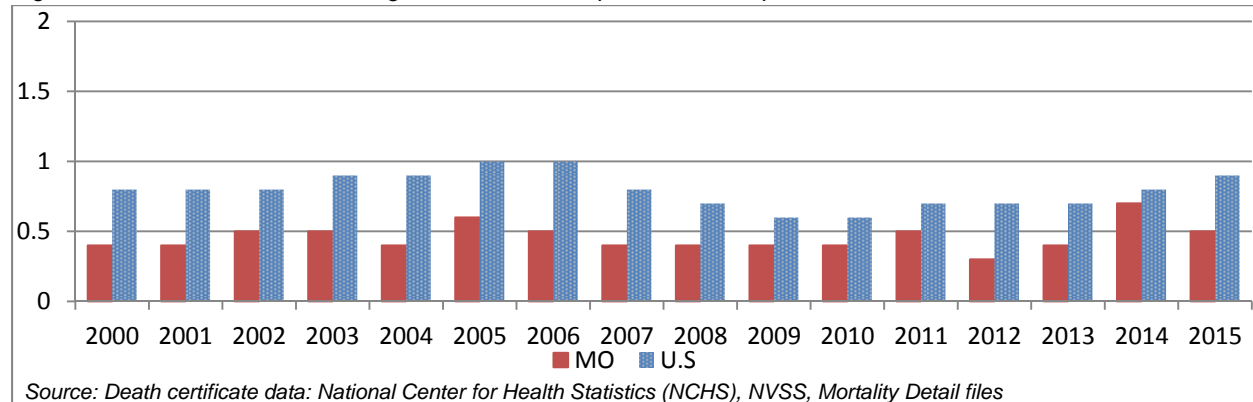
Illicit Drug Consequences

Illicit Drug-Related Mortality

Missouri has been lower than the national average for rate of deaths due to drug related behaviors for the last decade.

Due to small numbers, data for gender or race are unreliable for this variable and not reported.

Figure 37: Rate of Deaths from Drug Related Behavior per 100,000 Pop: U.S. and Missouri, 1998-2015



Missouri has been higher than the national average for rate of deaths related to drug related overdose / poisonings for the last several years. This number is also climbing for both Missouri and the U.S., although U.S. numbers appear to have leveled off.

Men are more likely than women to die from this cause. Over time, Whites have been more likely as well, when compared to African Americans, but this has not been true for the past several years.

Figure 38: Rate of Deaths from Drug Related Overdose/Poisonings per 100,000 population: U.S. and Missouri, 1998-2010. **NOTE: Scale has changed from the above graph**

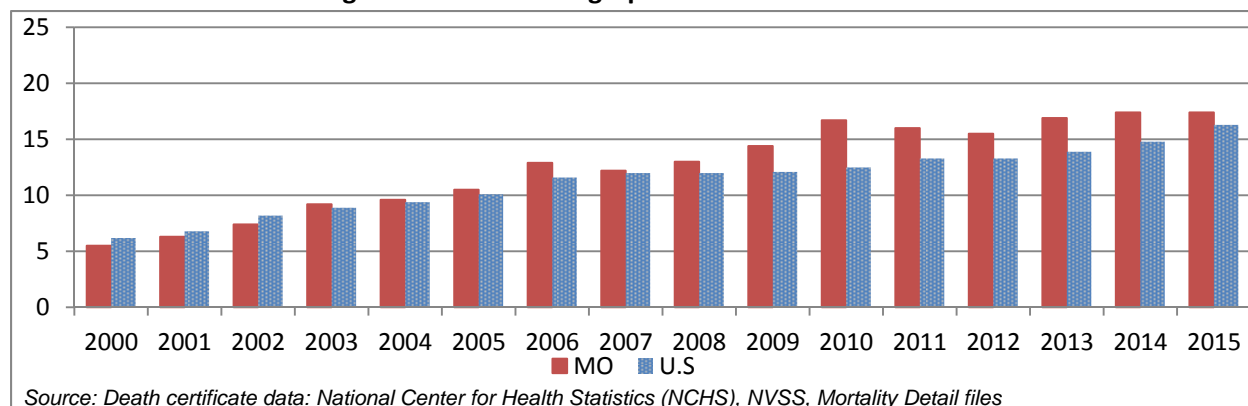
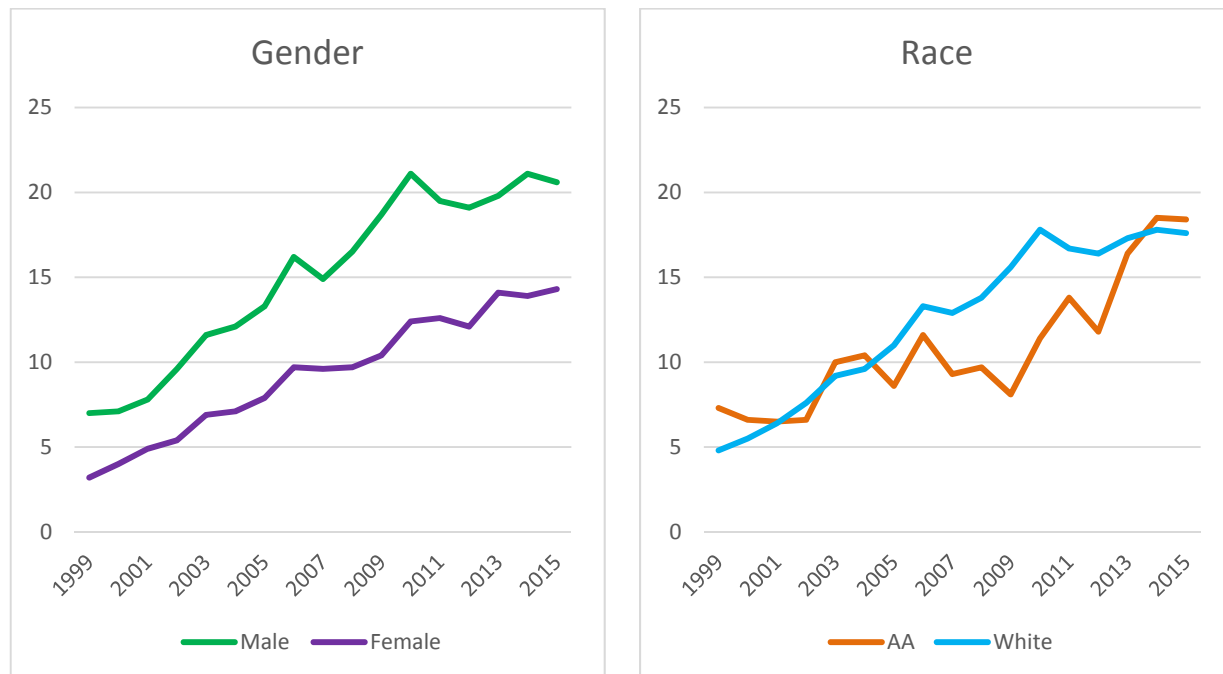


Figure 39: Rate of Deaths from Drug Related Overdose/Poisonings by Demographics per 100,000 Pop: MO only, 1998-2015

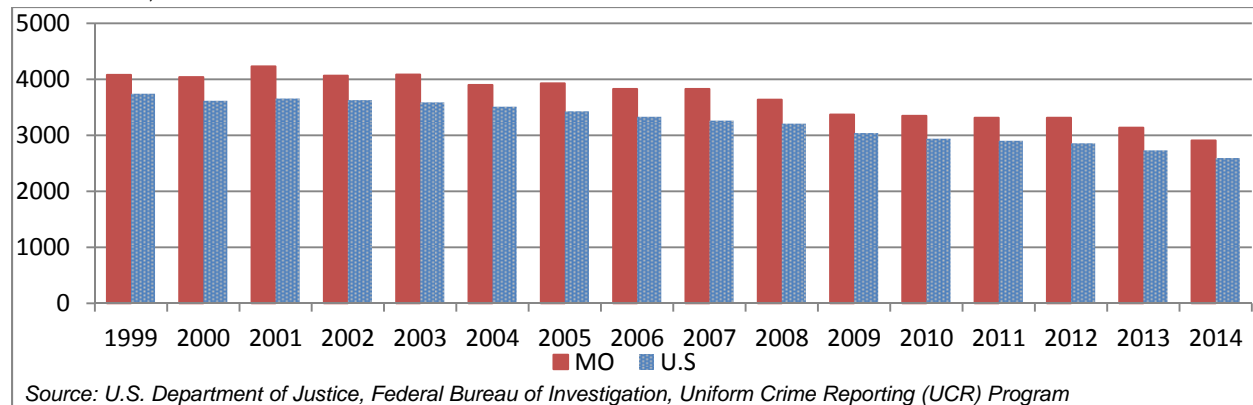


Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

Crime

Missouri has been higher than the national average for number of property crimes for the last decade. Rates for both Missouri and the US are trending downward.

Figure 40: Number of Property crimes (larceny, burglary, motor vehicle theft) Reports to Police per 100,000 Pop, U.S. and Missouri, 1999-2014.



Illicit Drug Dependence or Misuse

In 2013-14, 3.1% of those in the 12-17 age group reported dependence or misuse of an illicit drug in the past year. This compares to 7.6% of 18-25 year olds and 1.7% in the 26+ age group.

2.6% of Missourians aged 12 and older reported dependence on or misuse of any illicit drug. This is a number that has remained relatively steady over the past few years and is approximately equal to the national average.

Those in the 18-25-year-old age group are most likely to be dependent on or misusing illicit drugs.

Figure 41: % of Persons Aged 12 or Older Reporting Dependence on or Misuse of Any Illicit Drug in the Past Year: U.S. and Missouri Ages 12 and Older, 2002-2014

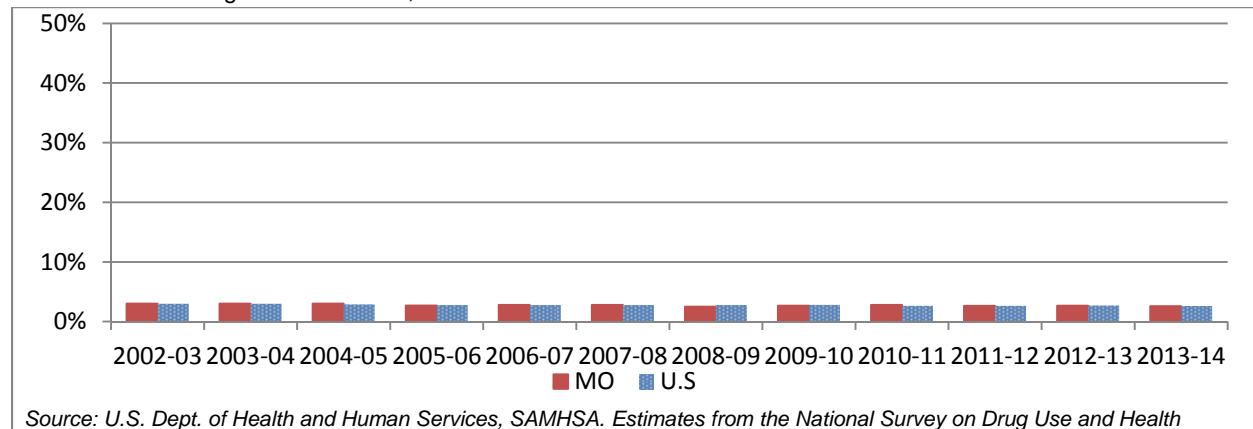
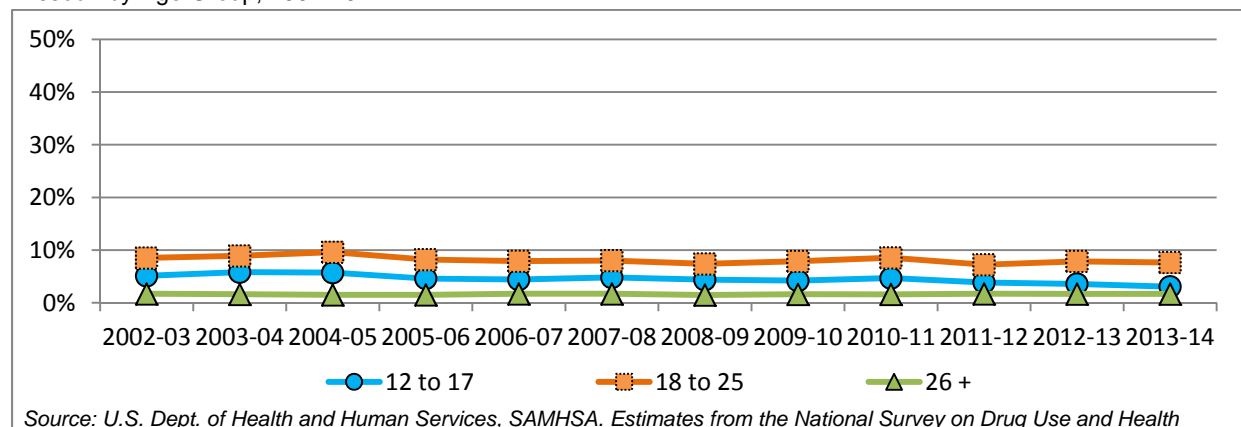


Figure 42: % of Persons Aged 12 or Older Reporting Dependence on or Misuse of Any Illicit Drug in the Past Year: In Missouri by Age Group, 2002-2014



Key Risk and Protective Factors aka Intervening Variables



During the Strategic Prevention Framework State Incentive Grant (SPF SIG) and continuing into the Partnerships for Success Grant, Missouri coalitions were encouraged to use the Hawkins and Catalano Model of Risk and Protective Factors in their strategic planning process. This model suggests a variety of risk factors and several more additional protective factors that contribute to youth's drinking behavior and has been adapted to apply to other problem behaviors as well (drugs, violence, etc.). They were to use this model to decide what intervening variables might be at the root of the priority issue in their community, gather data on those intervening variables and then use data based decision making to determine which variables would be addressed under the grant. In order to continue building upon what communities learned in these efforts, Missouri will continue to define Risk and Protective Factors according to the Hawkins and Catalano Model.

The only data source currently available in Missouri for these factors is the Missouri Student Survey. This section borrows heavily from the 2016 Missouri Student Survey Report³. Data are collected in the Spring of even number years.

Peer Engagement in the Problem Behavior

Most youth surveyed had no friends who used substances.

The large amount of youth who report having four or more friends engaging in substance use indicates that, if somebody is using, it is probably common among their social group.

Table 2: % of Youth who have Friends that Use Substances, 2016

	0 friends	1 friend	2 friends	3 friends	4 + friends
Cigarettes	70.6%	10.4%	6.5%	3.8%	8.6%
Alcohol	54.8%	11.4%	9.1%	4.3%	20.4%
Marijuana	64.6%	9.8%	7.1%	3.3%	15.3%
Other Illegal Drugs	89.2%	4.9%	2.4%	1.3%	2.1%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Perception of Harm

Most youth believe that alcohol and drug use poses a moderate or great risk to them.

E-cigarettes and marijuana are seen as the least risky of the substances.

Table 3: Youths' Perception of Risk of Harm from Using Substances, 2016

	No Risk at All	Slight Risk	Moderate Risk	Great Risk
Cigarettes	6.8%	8.2%	20.4%	64.7%
Alcohol:				
Any alcohol use	7.3%	26.4%	35.4%	30.9%
One or two drinks nearly every day	9.5%	19.9%	34.7%	35.9%
Five or more drinks once or twice a week	6.8%	14.8%	30.3%	48.1%
E-Cigarettes	13.4%	27.1%	31.7%	27.8%
Marijuana	17.3%	19.3%	20.9%	42.6%
Over the Counter Drugs	7.1%	15.2%	29.4%	48.2%
Prescription Drugs	5.3%	8.4%	24.6%	61.8%
Other Illegal Drugs	5.2%	3.8%	11.9%	79.0%
Synthetic Drugs	5.8%	5.8%	16.4%	72.0%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Law Enforcement

Most youth did not believe that the police would catch a substance user in their neighborhood. This is fairly consistent across all drugs.

Table 4: % of Youth who Think The Police would Catch Substance Users in their Neighborhood, 2016

	No!	no	yes	Yes!
Cigarettes	26.9%	43.4%	20.0%	9.6%
Alcohol	24.9%	41.1%	22.8%	11.2%
Marijuana	21.0%	34.0%	26.0%	18.9%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Availability

Approximately half of all youth surveyed thought that over the counter drugs and alcohol were either “very easy” or “sort of easy” to obtain.

While youth thought that remaining substances were more difficult, over a third still thought marijuana and cigarettes (both types) were at least sort of easy to obtain. It should be noted that, at least for older participants, cigarettes are legal for them to purchase in many areas of the state.

Interestingly, less than 1 out of 3 youth thought that prescription drugs would be “very easy” or “sort of easy” to obtain.

Table 5: Youths’ Perception of Substance Availability, 2016

	Very Easy	Sort of Easy	Sort of Hard	Very Hard
Cigarettes	25.7%	20.4%	16.1%	37.9%
Alcohol	27.5%	23.2%	15.1%	34.2%
Over-the-Counter Drugs	34.2%	17.4%	14.4%	34.0%
E-Cigarettes	24.9%	18.2%	15.5%	41.4%
Marijuana	21.3%	16.0%	12.9%	49.9%
Prescription Drugs	14.4%	13.3%	21.7%	50.6%
Synthetic Drugs	10.1%	11.9%	19.0%	59.1%
Other Illegal Drugs	5.9%	8.1%	15.8%	70.2%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Perception of ‘wrongness’

Most youth thought that it was “very wrong” to use all substances with the exception of alcohol.

Youth were most likely to accept alcohol use.

Table 6: Youths’ Perception of Wrongfulness of Substance Use, 2016

	Not wrong at all	A little bit wrong	Wrong	Very wrong
Cigarettes	4.5%	7.1%	17.3%	71.1%
Alcohol:				
Any type of alcohol	11.8%	20.1%	18.1%	50.1%
One or two drinks every day	5.0%	8.2%	20.5%	66.3%
Five or more drinks once or twice a week	4.7%	6.6%	16.8%	72.0%
E-Cigarettes	8.9%	11.9%	18.1%	61.0%
Marijuana:				
Any use	10.7%	10.3%	14.2%	64.9%
Once or twice a week	9.5%	9.3%	14.5%	66.7%
Over the Counter Drugs	3.1%	4.7%	17.7%	74.6%
Prescription Drugs	2.2%	3.9%	15.7%	78.3%
Other Illegal Drugs	1.4%	1.6%	11.0%	86.0%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Rebellious attitudes

Most youth did not report rebellious attitudes.

Table 7: Extent of Rebellious Attitudes, 2016

	Strongly disagree	Disagree	Agree	Strongly Agree
I ignore rules that get in my way.	35.9%	45.4%	15.9%	2.8%
I do the opposite of what people tell me, just to get them mad.	48.2%	39.4%	10.3%	2.2%
I think sometimes it is okay to cheat at school.	45.2%	34.0%	18.1%	2.7%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Parental attitudes

Most youth thought that their parents would think they were “very wrong” to use all of the substances asked about.

However, again youth saw alcohol as the least “wrong” drug when considering their parents’ perception. When a dosage was indicated (1-2 drinks nearly every day), youth reported similar rates for alcohol as compared to other drugs.

Table 8: Youths’ Perception of Parental Perception of Wrongfulness of Substance Use, 2014

	Not wrong at all	A little bit wrong	Wrong	Very wrong
Cigarettes	2.6%	4.6%	11.5%	81.3%
Alcohol (dosage not indicated)	4.5%	12.3%	18.1%	65.1%
Alcohol (1-2 drinks nearly every day)	2.2%	3.6%	11.2%	83.0%
Marijuana (dosage not indicated)	3.4%	4.8%	9.7%	82.1%
Marijuana (1-2 times per week)	3.1%	3.4%	8.3%	85.2%
Over the Counter Drugs	2.3%	1.6%	7.5%	88.7%
Prescription Drugs	2.4%	2.7%	8.2%	86.8%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

School bonding

The majority of youth had positive things to say about their school environment.

Youth were least likely to endorse the item asking if the school notifying their parents of their achievements.

Table 9: Perceptions and Attitudes toward School by Youth, 2016

	Strongly disagree	Disagree	Agree	Strongly Agree
My teacher(s) notice(s) when I am doing a good job and let me know about it.	5.5%	21.4%	58.3%	14.8%
The school lets my parents know when I have done something well.	18.4%	42.4%	31.8%	7.4%
In my school, rules are enforced fairly.	10.4%	24.4%	52.9%	12.3%
In my school, students of all races and ethnic groups are treated equally.	6.4%	15.2%	46.6%	31.9%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Key Mental Health Indicators



National Comparison

Rates for having at least one major depression episode are typically higher in Missouri than nationally.

Missourians do not show a lot of variability in depressive episodes between the age categories. However, the wide range of the 26+ age group may be obscuring other peaks that occur later in life.

Figure 43: % of Adults Aged 18 and more Having at Least One Major Depressive Episode in the Previous Year: U.S. and Missouri , 2004-2013

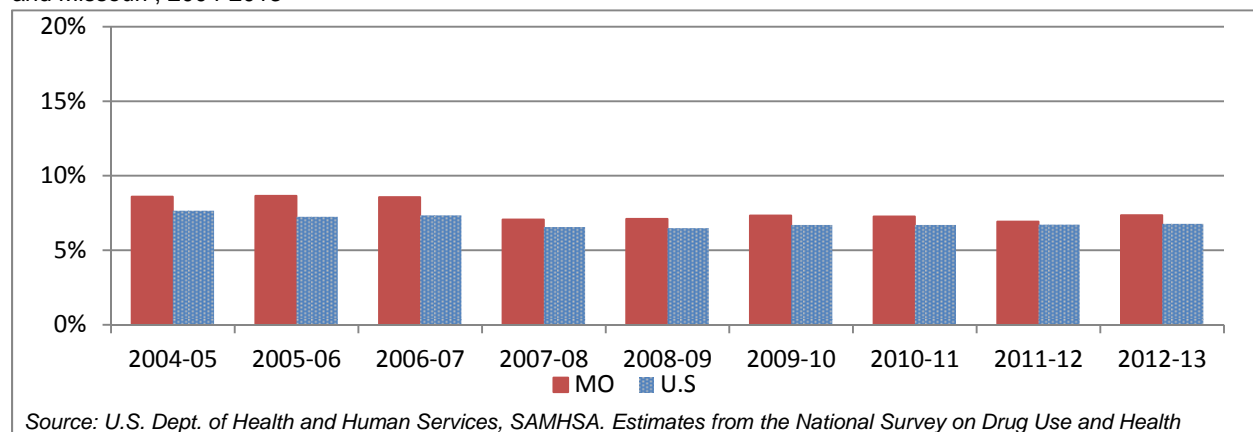
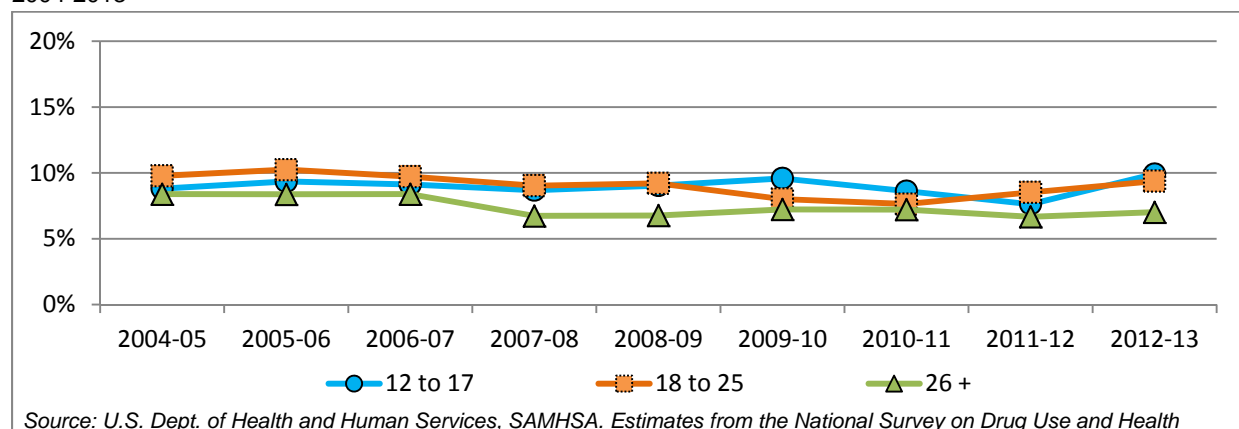
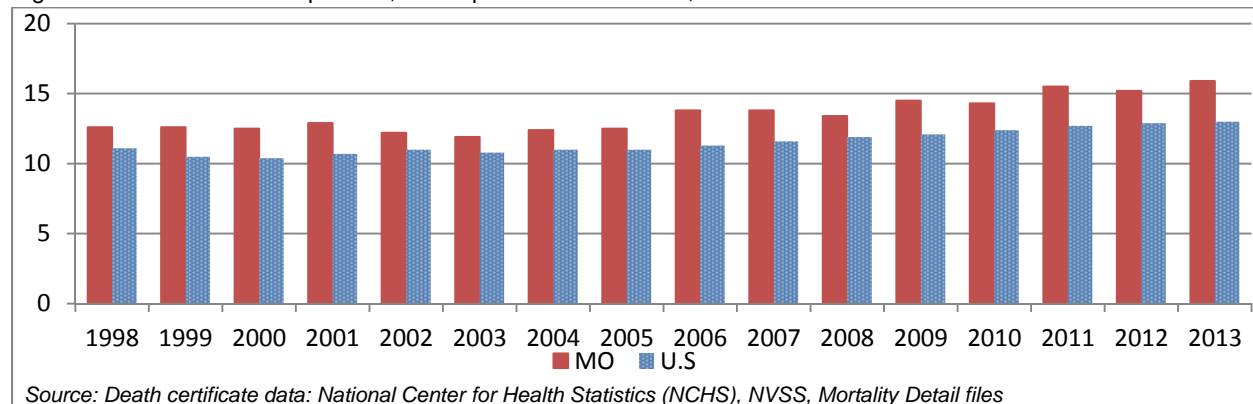


Figure 44: % of Missourians Having at Least One Major Depressive Episode in the Previous Year: by Age Group, 2004-2013



- According to NSDUH, Missouri has been slightly higher than the national average for having serious thoughts about suicide in the last year. The Missouri rate for 2011-12 was 3.95% and 2012-13 was 4.05%. This compares to the national average of 3.77% and 3.89% respectively.
- Missouri has been higher than the national average for rate of deaths due to suicide for the last decade, and the rate continues to climb.

Figure 45: Rate of Suicides per 100,000 Pop: U.S. and Missouri, 1998-2013



Missouri Youth

According to the Missouri Student Survey⁴:

- 22.7% said they were sad in the last month “often” or “always”
- 13.5% said they felt hopeless about their future “often” or “always”
- 21.7% said they felt like not eating or eating more than usual while 24.8% slept more or less than usual “often” or “always”
- 13.9% of youth surveyed reported that they considered suicide in the last year
- 9.9% made a plan to attempt suicide

Table 10: Number of Suicide Attempts in the Past Year (12 months), 2014

	0 times	1 time	2 or 3 times	4 or 5 times	6 or more times
How many times did you actually attempt suicide?	93.6%	3.1%	2.5%	0.4%	0.3%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Self-harm is defined as attempting to harm oneself on purpose in a deliberative, but not suicidal, way. While the majority of youth did not report any attempt of self-harm in their lifetime, 18.0% reported one or more incidents. The most common method of self-harm was “cut, scratched or hit myself on purpose”.

Table 11: Percent of Students Reporting Lifetime Types of Self-Harm, 2014

	Yes
Cut, scratched or hit myself on purpose to hurt myself	15.5%
Pulled my hair or eyelashes	4.7%
Swallowed more medicine than a doctor told me to take to hurt myself	3.9%
Burned myself	3.3%
Used drugs or alcohol to hurt myself	2.6%

Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

⁴ Source: Depue, S, Kryah, R, Matthews, J Scott, S, & Sale, E (2016) Missouri Student Survey Report.

Treatment Data

Of the known diagnoses, Division of Behavioral Health: Psychiatric Services treats mood (affective) disorders most commonly followed by anxiety disorders and psychotic disorders.

Table 12: Diagnoses of Clients Served by Psychiatric Services, 2008-2013

Diagnosis Category	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
Adjustment Disorder	2,674	2,826	2,987	2,870	2,973	3,043
Anxiety Disorder	15,459	17,381	19,960	22,842	24,141	26,854
Dementia	284	199	209	132	152	567
Developmental Disorder	827	884	959	1,032	1,070	1,112
Impulse Control Disorder	8,889	9,976	11,333	11,504	11,707	12,491
Mood Disorder	35,387	38,273	42,599	45,193	45,731	47,484
Personality Disorder	7,079	6,758	6,892	4,694	5,016	5,161
Psychotic Disorder	13,021	13,602	14,509	14,602	14,635	15,154
Sexual Disorder	176	160	162	276	280	313
Other Diagnosis	4,599	4,500	4,764	4,462	4,738	5,217
Diagnosis Unknown	16,016	8,161	9,681	8,005	6,961	6,277
Total Numbers Served	73,731	70,287	78,254	77,539	75,906	77,165

Source: Division of Comprehensive Psychiatric Services -- Clinical Data.

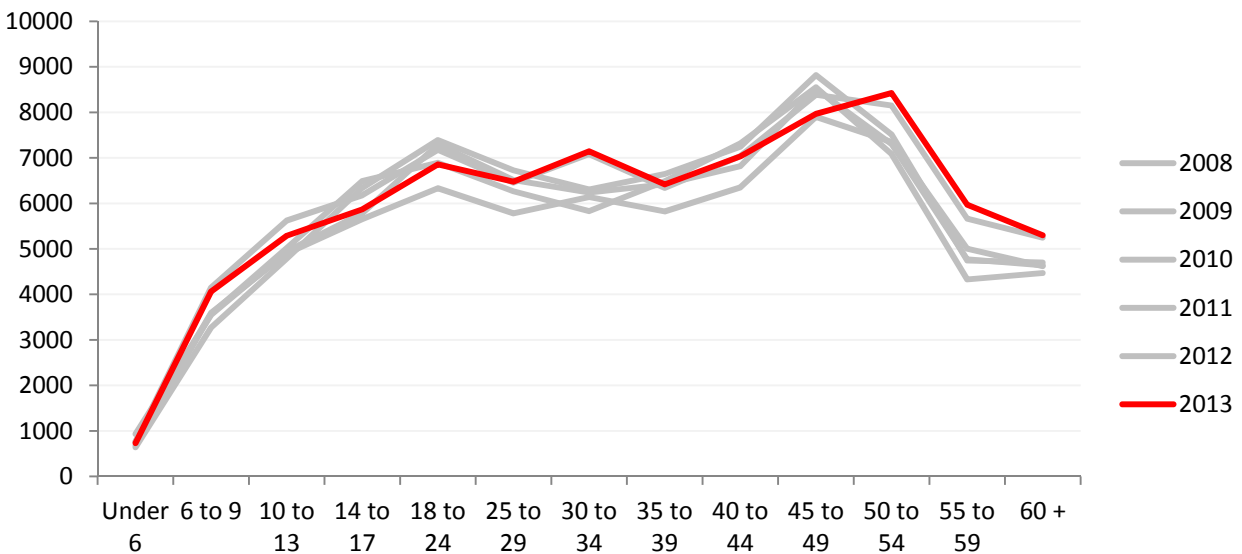
NOTE: The total number of diagnoses is larger than the number served because some individuals had more than one type of disorder.

- Psychiatric Services serves approximately equal number of males and females. The majority of clients are Caucasian, followed by African American. This distribution is similar to that of the state's population.⁵
- Most clients are referred by themselves, family or a friend.⁸

⁵ 2014 Status Report, <http://dmh.mo.gov/docs/ada/rpts/status2014/missouri.pdf>

- As Missourians age out of childhood, the numbers served by CPS increase. This peaks for the first time at the 18-24 age group and most dramatically in the 40s and 50s.
- Missourians in their mid to late 40s are typically most commonly served by CPS, although in 2013 this shifts into the early 50s.

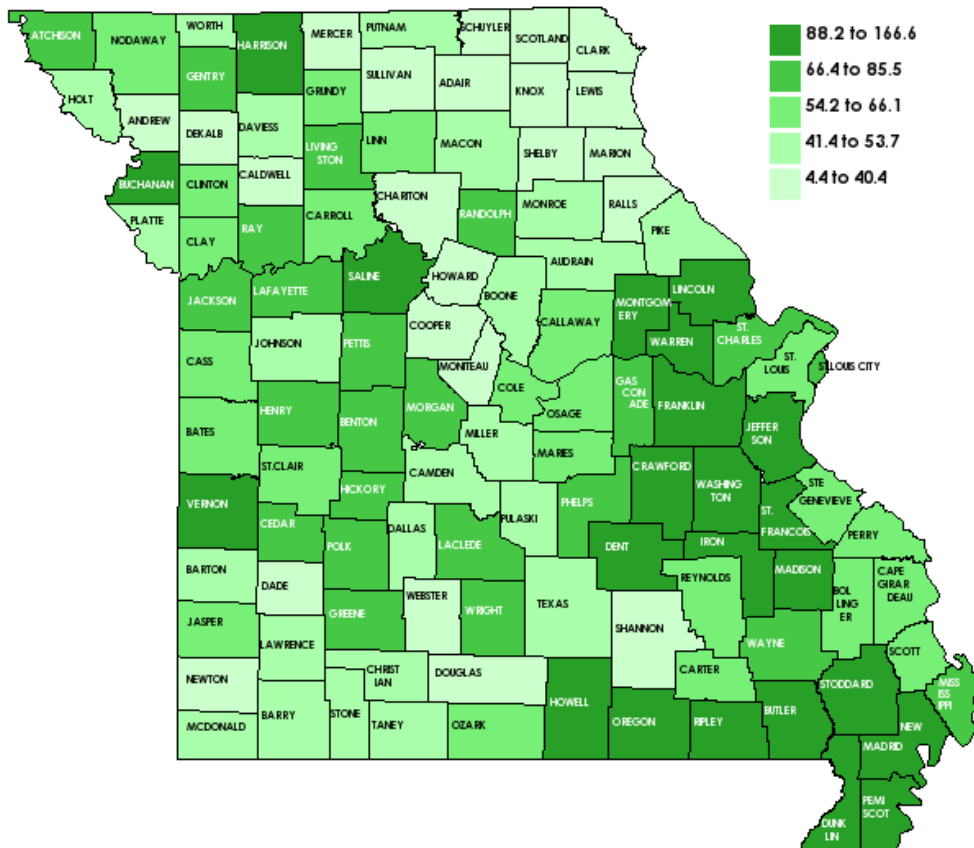
Figure 46: Number of Clients Served by Comprehensive Psychiatric Services, by Age Group, 2008-2013



Source: Division of Comprehensive Psychiatric Services -- Clinical Data.

- Hospital admissions for affective disorders show highest rates in the southeast and lowest rates in the north east and central parts of the state.

Figure 47: Inpatient Hospitalizations for Affective Disorders Rates per 10,000: Residents of Missouri, Aggregate data 2012



Source: Division of Health and Senior Services, MICA database

Mortality Rates of Death due to Suicide

Missouri has been higher than the national average for rate of deaths due to suicide for the last decade.

Men and Whites are much more likely to die due to suicide.

Figure 48: Rate of Death due to Suicide per 100,000 Pop: U.S. and Missouri, 1998-2015

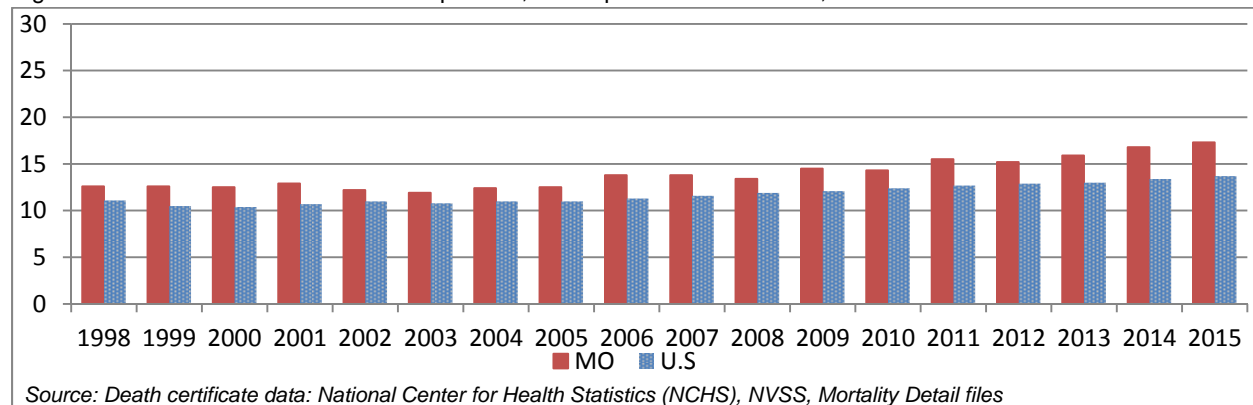
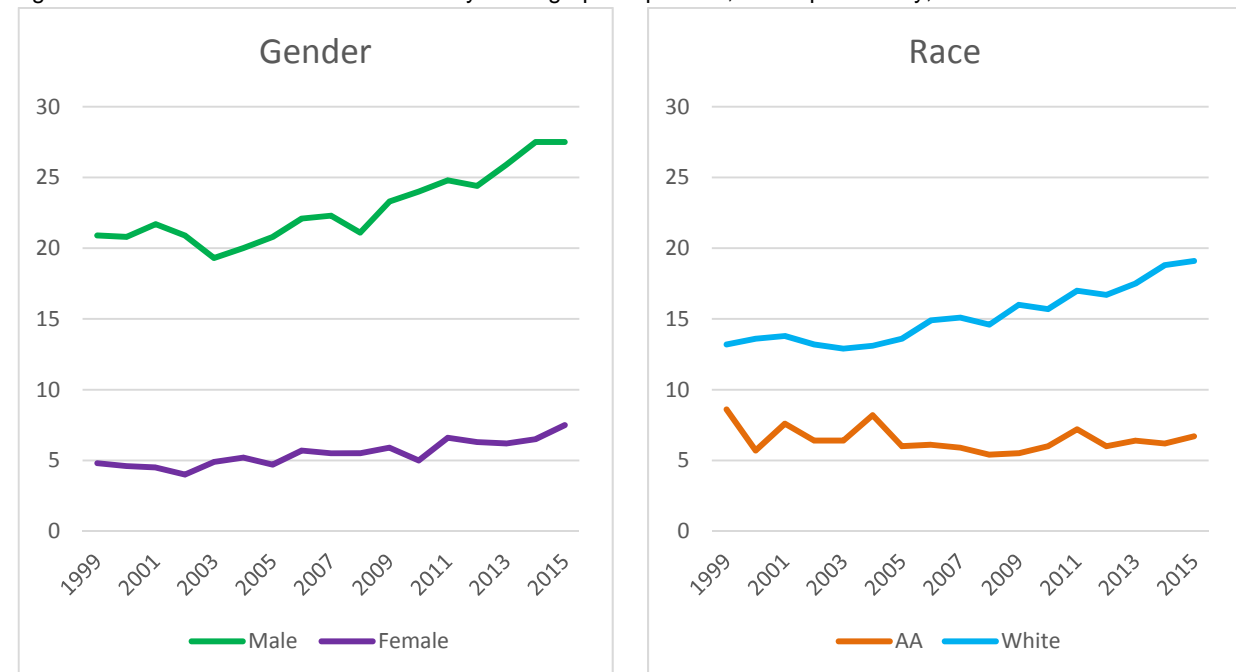


Figure 49: Rate of Deaths due to Suicide by Demographics per 100,000 Pop: MO only, 1998-2015



Source: National Center for Health Statistics. Underlying Cause of Death 1999-2015 on CDC WONDER Online Database

High Risk Subpopulations



The Missouri Behavioral Health Epidemiology Workgroup (MO-BHEW) surveyed those who work in the behavioral health field in Missouri on two occasions (2011 and 2013), asking about their data needs. Both of these surveys indicated a desire for data on high risk subpopulations. In 2013, the MO-BHEW identified high risk subpopulations which had data available on substance use and mental health. Below, data are reported on two of those identified subpopulations: lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals and veterans. We have been unable to identify additional state-level data sources for other identified high risk populations.

LGBTQ

Data on the lesbian, gay, bisexual, transgender, and queer (LGBTQ) population were limited to a sample of middle school, high school and college-aged youth (N = 190) from the Missouri School Climate Survey conducted by the Missouri GSA Network. The majority of the sample consisted of high school (63%) and college (35%) students. Approximately 66% of the sample identified as LGBTQ, and 38% identified as straight. About 12% of the sample identified as transgender. The sample was majority female (64%) and white (77%). See the full report for additional demographic details.⁶

Substance Misuse Indicators

Substance misuse indicator of using tobacco, smoking cigarettes, or hookah in the past 30 days was not broken down by LGBTQ and Straight students in the most recent GSA report. See previous report for past data.

Mental Health Indicators

Students who identify as LGBTQ are more likely than students identifying as straight to report having suicidal thoughts or feeling sad or depressed at least sometimes.

Table 13: % Having Thoughts about Committing Suicide in Missouri, By Sexual Orientation, 2014-2015

	% LGBTQ	% Straight
Reported having thoughts about committing suicide	78.6%	48.2%

Source: Missouri School Climate Survey

Table 14: % Feeling Sad or Depressed Often or Everyday in Missouri, By Sexual Orientation, 2014-2015

	% LGBTQ	% Straight
Reported feeling sad or depressed often or always	61.0%	25.9%

Source: Missouri School Climate Survey

⁶ <http://www.mogsanet.dreamhosters.com/wp-content/uploads/2012/12/2015MSCSAnalysis.pdf>

Veterans

Data on veterans are available from NSDUH. While there is a wealth of data regarding tobacco use among veterans, data on drugs and mental illness are more limited. Where possible, Missouri veterans are compared to both veterans nationally and Missouri civilians.

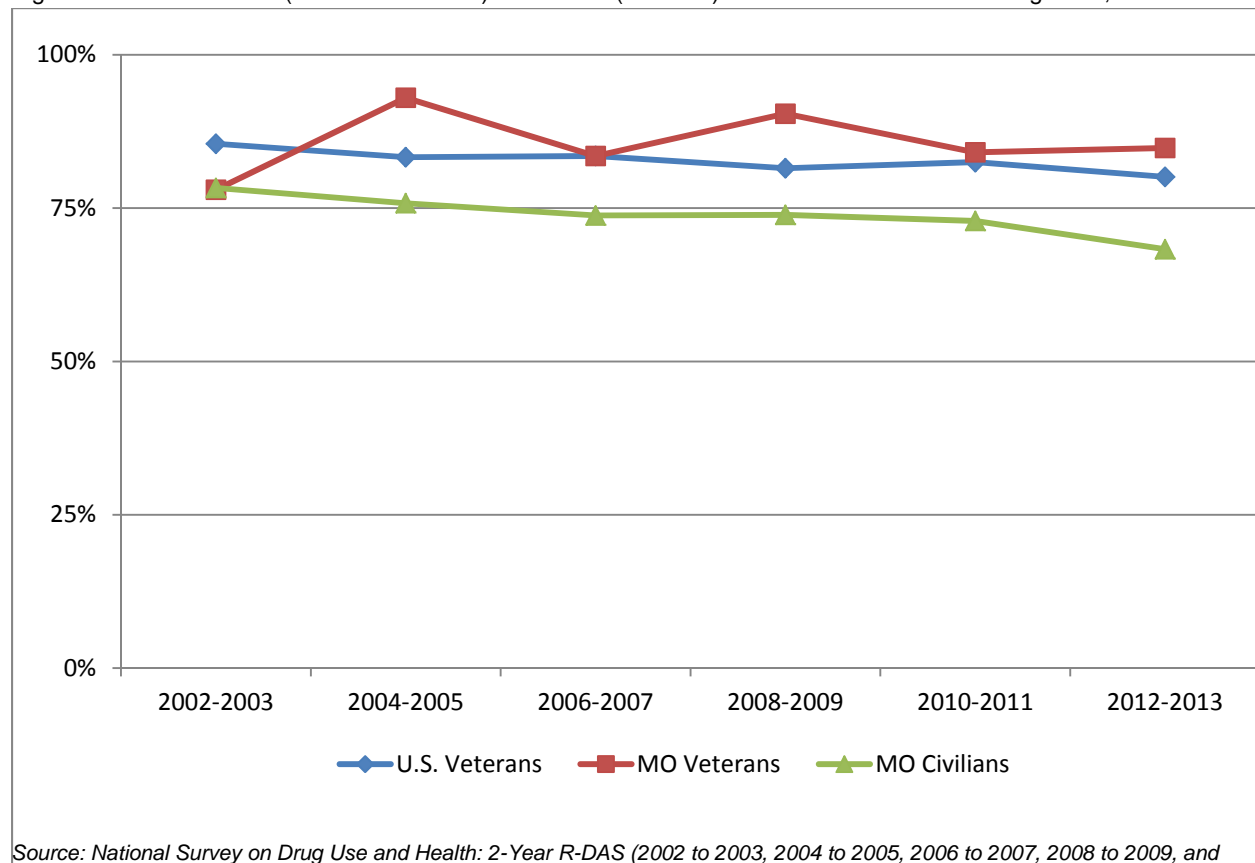
Note that NSDUH data has replaced BRFSS data, as it is publically available.

Tobacco Use

The percent of Missouri veterans who have ever smoked a cigarette is slightly more than the average of U.S. veterans.

In Missouri, the percent of veterans who have ever smoked a cigarette has remained relatively steady while the percent of civilians who have ever smoked a cigarette has declined across time.

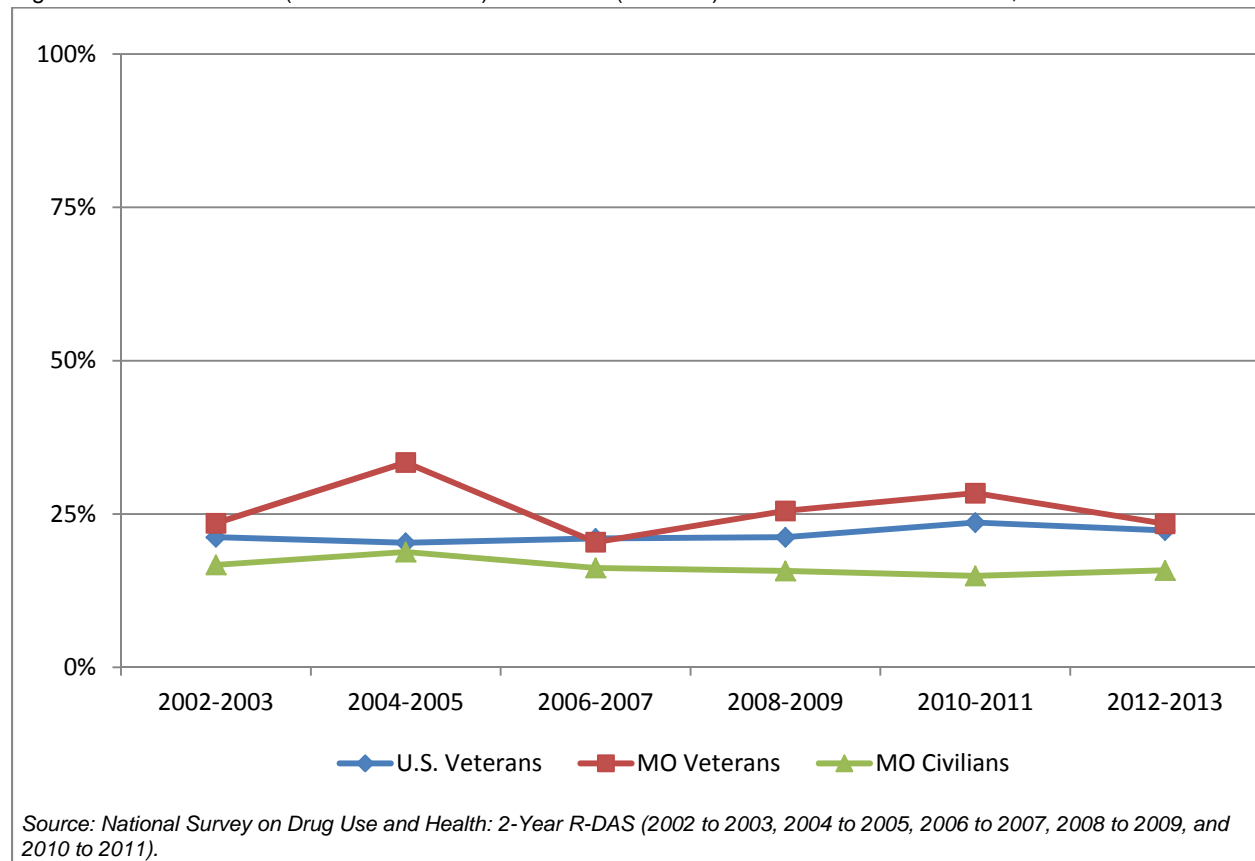
Figure 50: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked a Cigarette, 2002-2013



The percent of individuals in every category who have ever used snuff has remained relatively stable since 2002-2003.

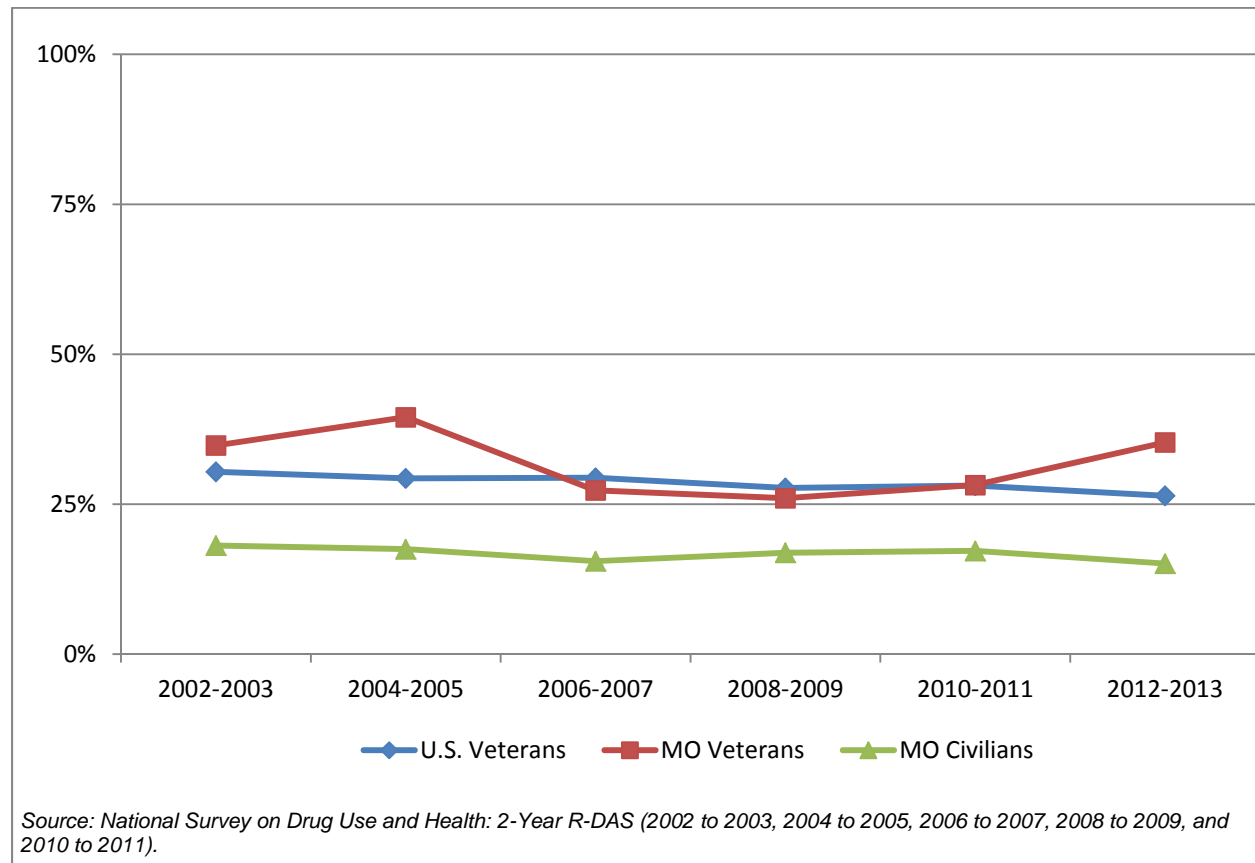
Veterans in general use snuff at a slightly higher rate than citizens. Missouri veterans have varied slightly but on average use slightly more than U.S. veterans.

Figure 51: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Snuff, 2002-2013



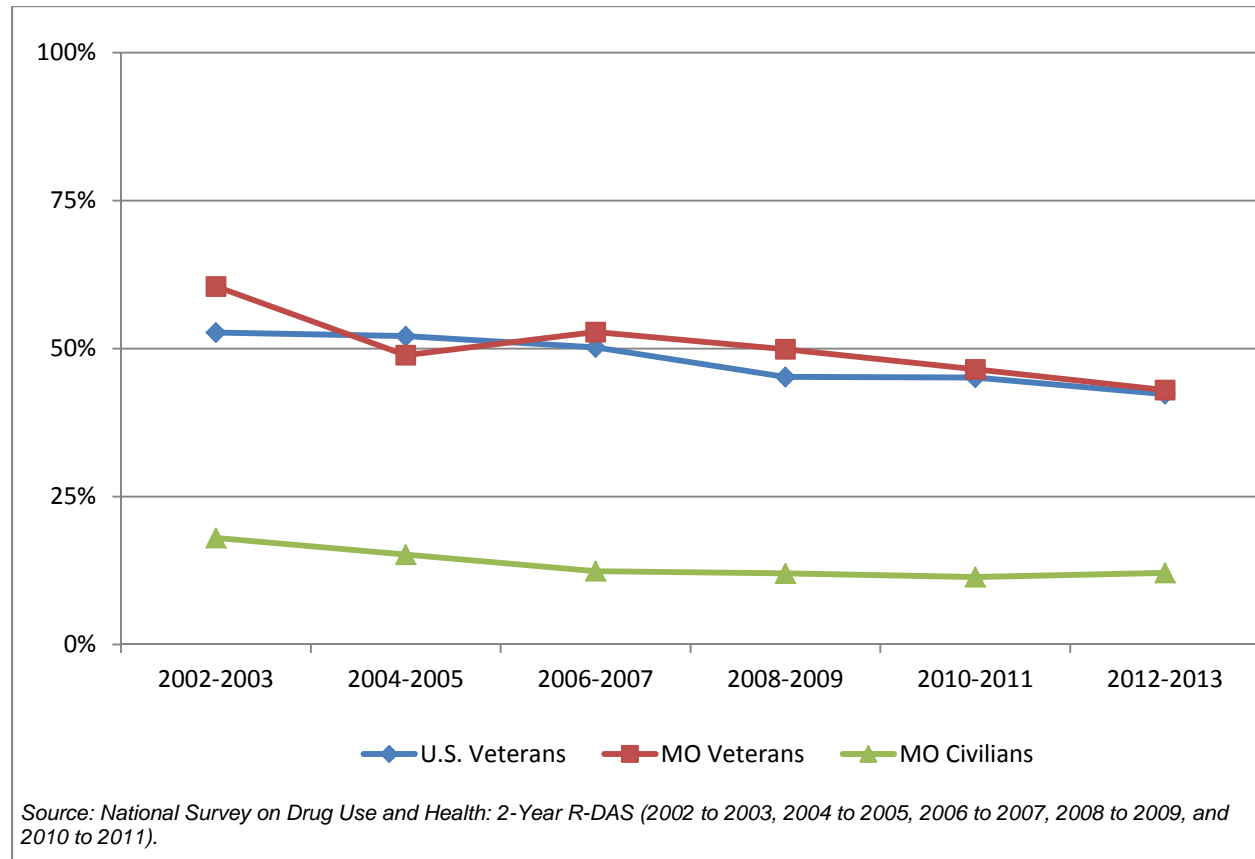
As with other tobacco products, veterans tend to use chew at a slightly higher rate than civilians.

Figure 52: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Chew Even Once, 2002-2013



As with other tobacco products, veterans tend to use pipe tobacco at a higher rate than civilians. Pipe tobacco rates for veterans have decreased slightly over time.

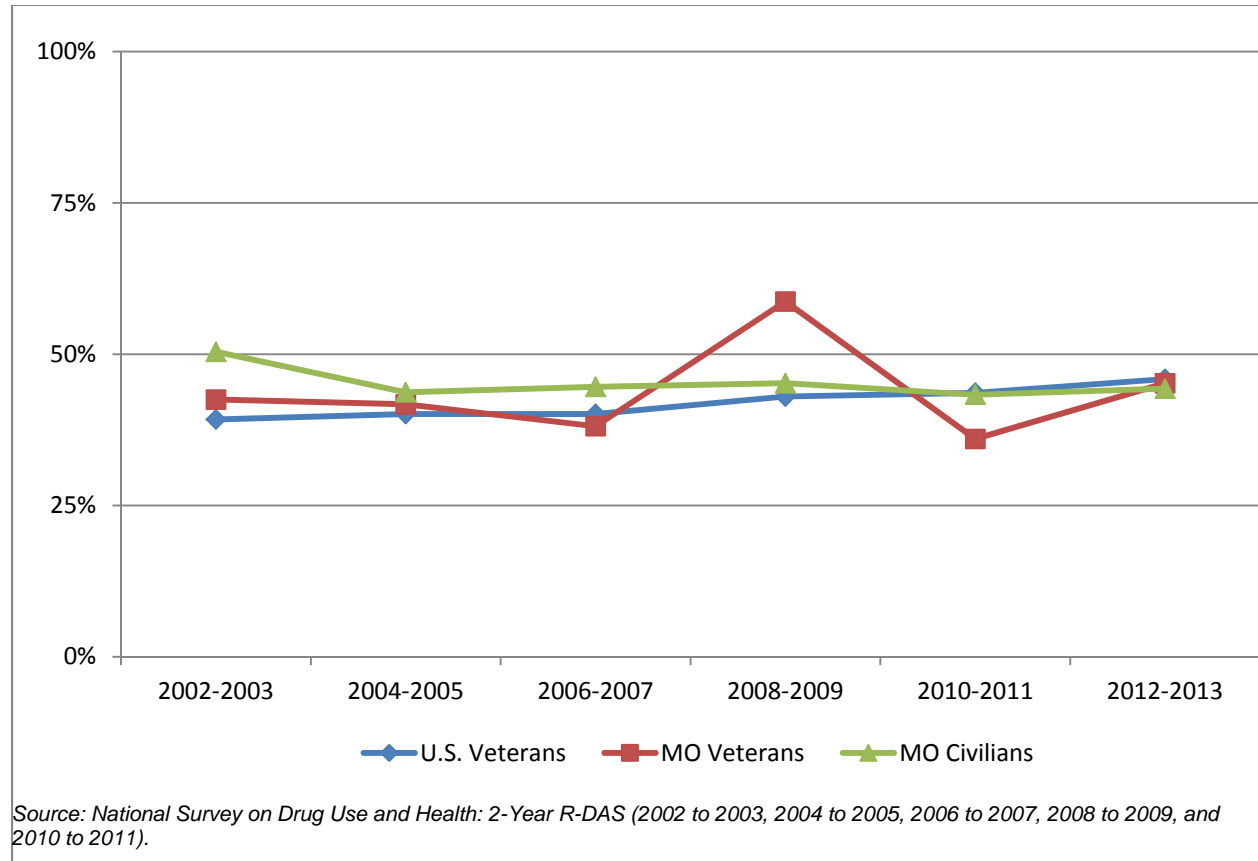
Figure 53: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked Pipe Tobacco, 2002-2013



Marijuana

With the exception of a data anomaly in 2008-2009, rates for marijuana use have remained relatively steady and similar for all groups.

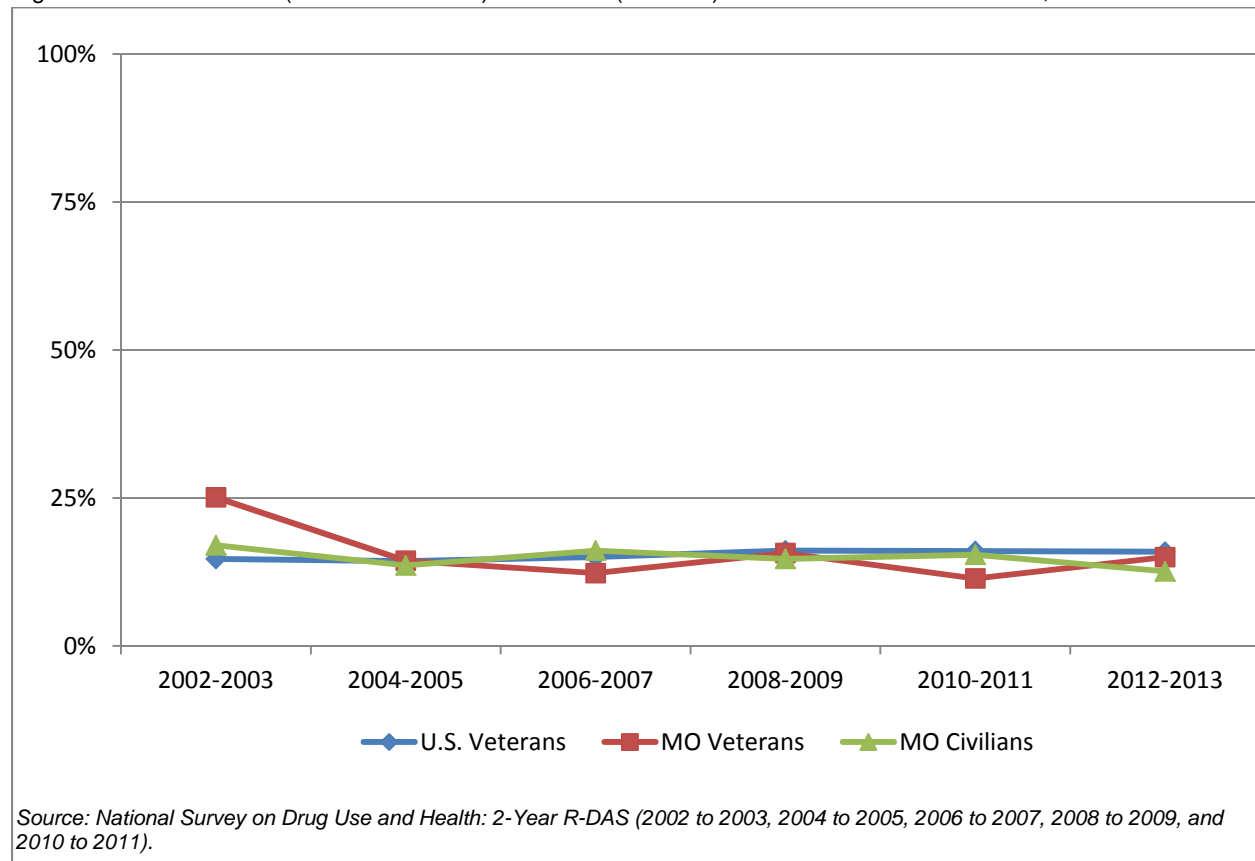
Figure 54: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Marijuana / Hashish, 2002-2013



Illicit Drugs Other than Marijuana

Rates for cocaine use have also remained relatively steady and similar for all groups.

Figure 55: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Cocaine, 2002-2013

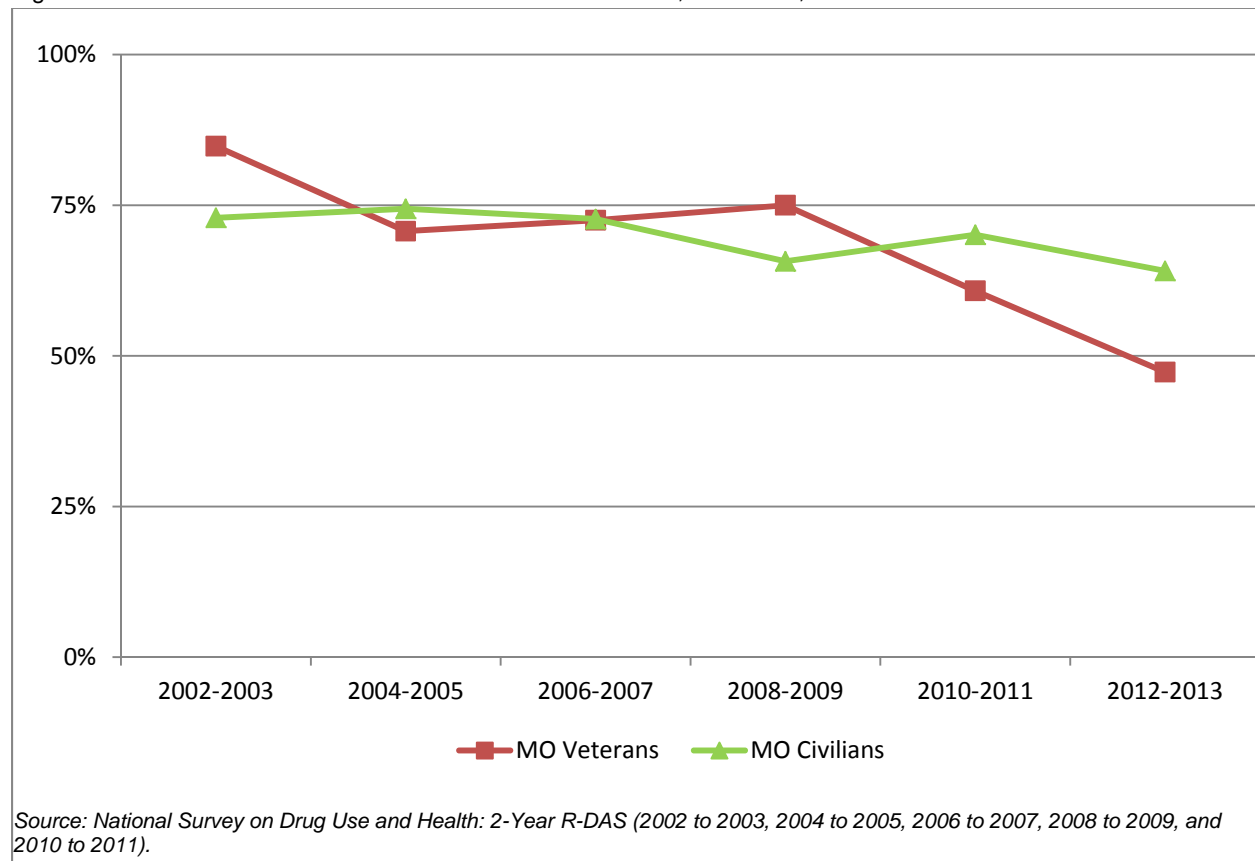


In Missouri, the percent of individuals who have ever used LSD has declined steadily since 2002-2003.

Currently, more civilians reported ever using LSD than veterans in Missouri.

Data for U.S. veterans who have ever used LSD were unavailable.

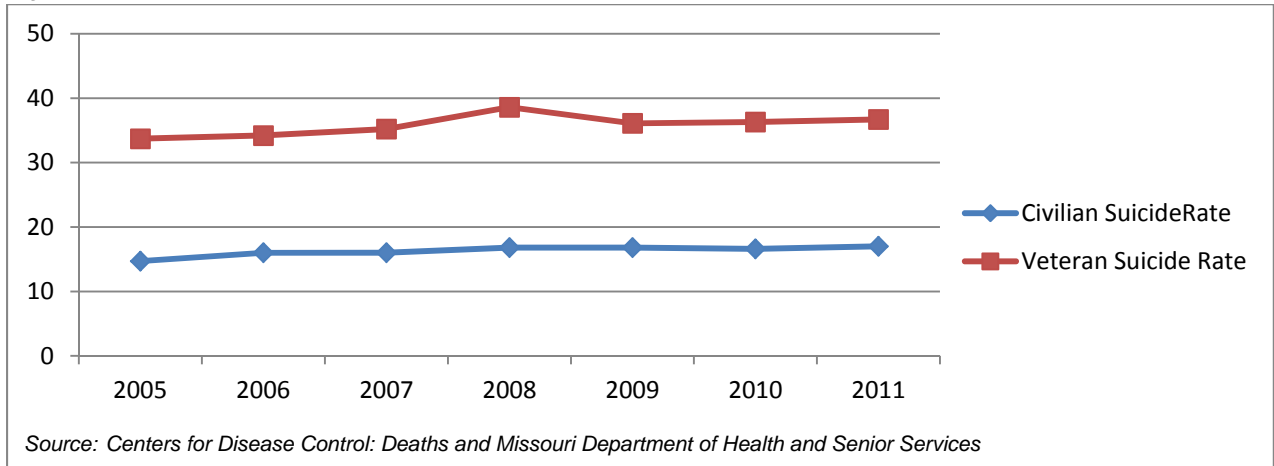
Figure 56: % of Veterans & Civilians who have Ever Used LSD, in Missouri, 2002-2013



Mental Health Indicators

Although stable over time, suicide rates in Missouri among veterans are more than double those among civilians.

Figure 57: Rate of Veteran Suicides per 100,000 Pop, in Missouri, 2005-2011

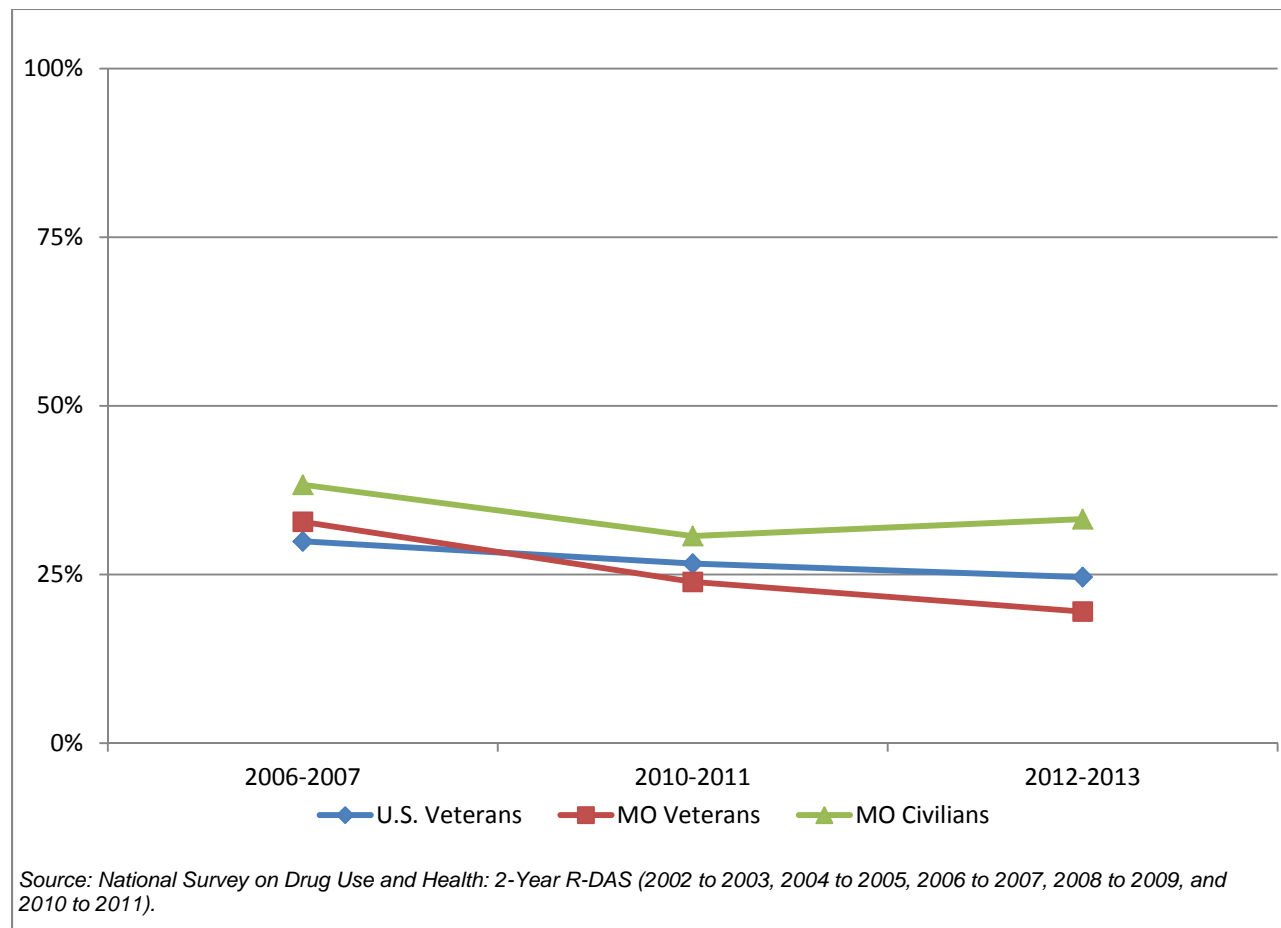


The percent of all groups who reported feeling sad, empty, or depressed for several days or longer has decreased slightly since 2006-2007.

The rate of veterans feeling sad, empty, or depressed for several days or longer is lower than the civilian rate.

Data were unavailable for the years between 2007 and 2010.

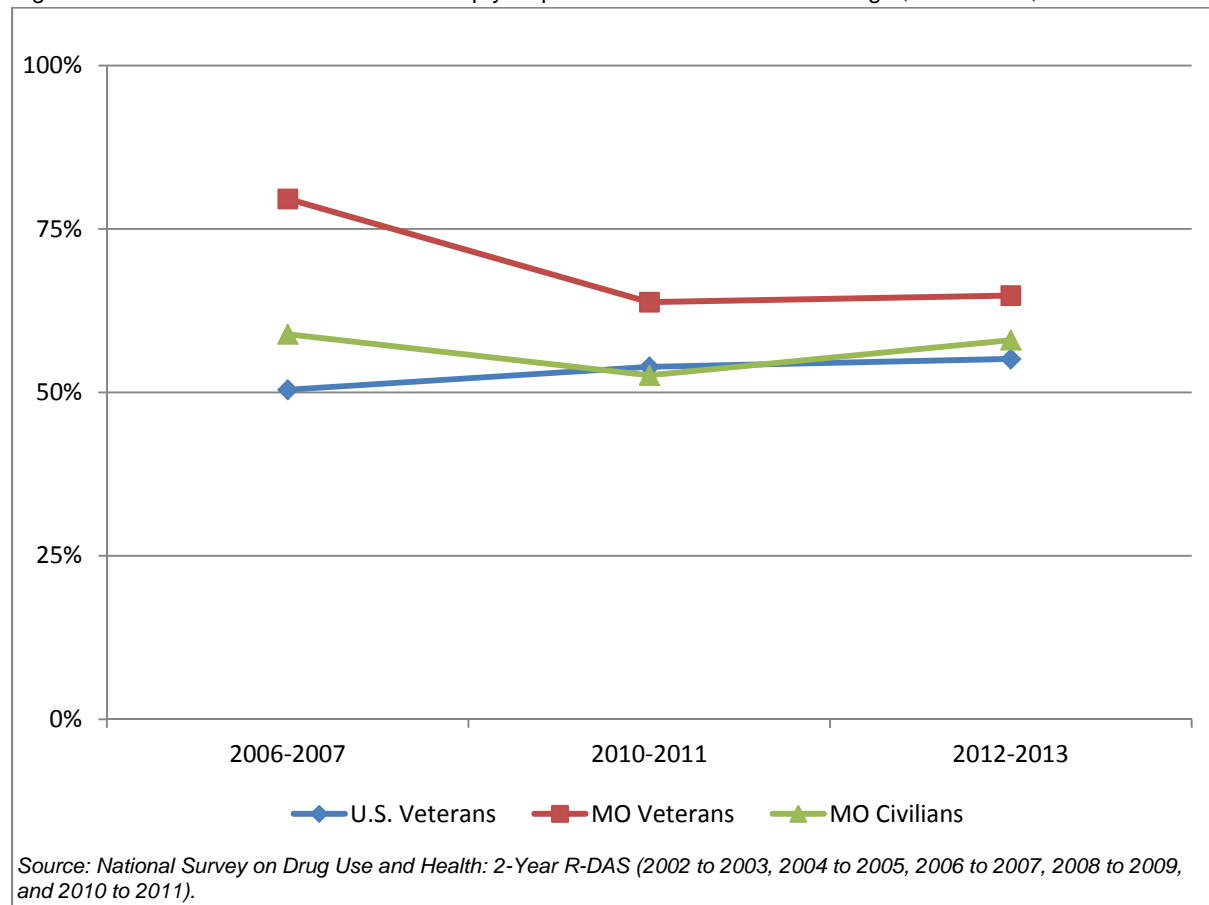
Figure 58: % of Veterans Who Felt Sad/Empty/Depressed for Several Days or Longer, in U.S. and Missouri, 2006-2013



The percent of Missouri veterans who reported feeling sad, empty, or depressed for several days or longer has decreased since 2006-2007. However, this rate is still higher than for Missouri civilians or U.S. veterans.

Data were unavailable for the years between 2007 and 2010.

Figure 59: % of Veterans Who Felt Sad/Empty/Depressed for Two Weeks or Longer, in Missouri, 2006-2013



Data Limitations and Gaps

This report attempts to provide an overview of the state of Missouri's behavioral health data. However, due to limitations in the data available and resources to write the report, there are gaps that remain.

Both the risk and protective factor, and the more in depth mental health data lack high quality, nationally comparable data sources. Local data were used to explore these variables in order to have some indication of their current status in Missouri. However, while some inferences can be made with local data, they should be interpreted cautiously. Methodological issues may cause some variability with the data that is not a true reflection of population. In addition, not having comparable numbers from other states or the national level leaves us without a way to determine the relative magnitude of the issues in the state.

Another concern is that, by using the risk and protective factors as defined by the Hawkins and Catalano Model, we are only able to examine middle and high school students and then with only a single data source. This does provide a starting point; however, further efforts will have to be made to determine which risk and protective factors play a role in influencing the behavioral health of people across the lifespan. Data quality was improved in 2016 with the introduction of a random sample at the state level however, response rates are slightly less than desired.

Data on consequences are available at the state level from the national data set and are included in this report. However, data indicating the cost to the state for each variable is desired by stakeholders but currently we are not able to obtain that.

The subpopulation data that would be most helpful at this point are that of the 18-21 and 21-25 year old age groups. Data show that this age group is part of the heaviest users for alcohol, tobacco and other drugs. Those in the 18-21 are not yet legally allowed to drink which raises additional concerns for this group to access available resources. While there are some data available on usage rates from the national surveys, there is no information there on risk and protective factors, where the young people are accessing the substances or other information which could be used to target interventions to this high risk group.

Additional subpopulation data would also be helpful. In 2013, the MO-BHEW identified four high risk subpopulations for which it might be able to obtain data: veterans, the homeless, persons with a disability, and lesbian, gay, bisexual, transgender and queer (LGBTQ) individuals. The group was able to obtain some Missouri data for LGBTQ youth and veterans, and is currently in the process of exploring data sources for disabled persons and homeless individuals. Current data for LGBTQ individuals is limited to a small sample of youth from the Missouri School Climate Survey, so we will continue to explore data sources pertaining to

substance use and mental health in this population. Data on substance use in pregnant women would also be helpful but there is no current data source for this information.

Conclusions

Alcohol and tobacco are the two most commonly used drugs in Missouri. Overall past-month usage rates for alcohol are similar to the national average. Binge drinking seems to be common among young (under 25) drinkers, raising concerns about risky drinking and the associated consequences. The past-month usage rates for cigarettes are increasing from 2011. Missourians aged 18 years and older had much higher daily usage rates for cigarettes than the U.S. population, while the daily usage rates among students are similar to the national average. Tobacco consumption related mortality rates are consistently higher than the national average.

While prescription drugs and illicit drugs are not as commonly used, the consequences of their use in Missouri tend to be higher than the national average. Risk and Protective Factor data indicate that more youth surveyed did not consider marijuana smoking to be a risky behavior than those who did not find other drugs to be risky. Over-the-Counter Drugs are the most available drug. Those 18-25 and males tend to have the highest use rates across all drugs.

When examining the risk and protective factors, over one-third of all youth surveyed found drinking alcohol to be of no risk or slight risk, much more than that of cigarette smoking. Alcohol drinking was reported to be less wrong than other drug usage by the parents.

When examining the mental health variables that have nationally comparable numbers, depression and suicide are larger problems in the state than is average for the nation. White males are the most vulnerable to suicide.

Finally, the MO-BHEW identified two high risk subpopulations with data on mental health and substance misuse: lesbian, gay, bisexual, transgender or queer (LGBTQ) individuals and veterans. LGBTQ students are more than twice as likely as heterosexual students to sometimes feel sad or depressed. They are at a much higher risk of suicidal thoughts as well. Missouri veterans, similarly, are more likely than civilians and veterans nationally to use tobacco. Missouri veterans' usage rates for marijuana and other illicit drugs are similar to civilians' and American veterans' rates. However, veterans are more likely to commit suicide and feel sad, empty, or depressed for two weeks and longer than civilians. Further, longitudinal research on veterans suggests that service members with combat exposures are at increased risk of alcohol-related problems, such as binge drinking, and an increase in smoking initiation.⁷ This additional information suggests that Missouri veterans are a population that is at risk for substance misuse and mental health issues, and should continue to be monitored.

⁷ National Institute on Drug Abuse, (2011). *Topics in Brief: Substance Abuse among the Military, Veterans, and their Families – April 2011*. NIDA. Retrieved from <http://www.drugabuse.gov/sites/default/files/veterans.pdf>

List of Figures

Figure 1: Estimated Past-Month Alcohol Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014	9
Figure 2: Estimated Past-Month Alcohol Use (%): In Missouri by Age Group, 2002-2014.....	9
Figure 3: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13, U.S. and Missouri, 1999-2015..	10
Figure 4: % Students in 9-12 Grades Reporting First Use of Alcohol Before Age 13: In Missouri by Gender, 1999-2015	10
Figure 5: Per capita ethanol consumption for Missouri, ages 14 and older (in gallons)	11
Figure 6: Estimated Past-Month Binge Drinking (%): U.S. and Missouri Ages 12 and Older, 2002-2014.....	12
Figure 7: Estimated Past-Month Binge Drinking (%): In Missouri by Age Group, 2002-2014.....	12
Figure 8: % of Adults Aged 18+ Reporting Driving After Drinking “perhaps too much”: U.S. and Missouri., 1999-2012 15	
Figure 9: % of Missouri Highway Safety Burden Caused by Alcohol Impaired Drivers, 2000-2013	16
Figure 10: Rate of All Cirrhosis Deaths per 100,000 Population: U.S. and Missouri, 1998-2015.....	17
Figure 11: Rate of All Cirrhosis Deaths by Demographics per 100,000 Pop: MO only, 1998-2015.....	17
Figure 12: Rate of Homicides per 100,000 Population: U.S. and Missouri, 1998-2015.....	18
Figure 13: Rate of Homicides by Demographics per 100,000 Pop: MO only, 1998-2015NOTE: Change in Scale	18
Figure 14: Estimated Past-Month Cigarette Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014	19
Figure 15: Estimated Past-Month Cigarette Use (%) in Missouri, By Age Group, 2002-2014.....	19
Figure 16: Estimated Past-Month Smokeless Tobacco Use (%) in Missouri, By Gender, 1999-2015.....	20
Figure 17: Estimated Daily Cigarette Use (%): U.S. and Missouri Ages 18 and Older, 2002-2012.....	21
Figure 18: Estimated Daily Cigarette Use (%) in Missouri Ages 18 and Older, By Gender, 2002-2011	21
Figure 19: % of Students in 9-12 Grade Reporting Smoking Cigarettes on 20 or More Days within the Past 30 Days: U.S and Missouri, 1999-2015	22
Figure 20: % Students in 9-12 Grades Reporting First Use of Tobacco Before Age 13, U.S. and Missouri, 1999-2015 23	
Figure 21: % Students in 9-12 Grades Reporting First Use of Cigarettes Before Age 13 in Missouri, By Gender, 1999-2015	23
Figure 22: Packs of Cigarettes Per Capita Sold in Missouri Based on Cigarette Tax Revenues, by county, Fiscal Years 2001-2014	24
Figure 23: Rate of Deaths from Lung Cancer per 100,000 Population: U.S. and MO, 1998-2015.....	26
Figure 24: Rate of Deaths from Lung Cancer by Demographics per 100,000 Pop: MO only, 1998-2015.....	26
Figure 25: Rate of Deaths from COPD and Emphysema per 100,000 Population: U.S. and MO, 1998-2015	27
Figure 26: Rate of Deaths from COPD and Emphysema by Demographics per 100,000 Pop: MO only, 1998-2015 ..	27
Figure 27: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease per 100,000 Pop: U.S. and MO, 1998-2015	28
Figure 28: Rate of Deaths from Cardiovascular and Ischemic Cerebrovascular Disease by Demographics per 100,000 Pop: MO only, 1998-2015 NOTE: Change in Scale.....	28
Figure 29: Estimated Past-Year Non-Medical Use of Pain Relievers (%): U.S. and Missouri Ages 12 and Older, 2002-2014	29
Figure 30: Estimated Past-Year Non-Medical Use of Pain Relievers (%) in Missouri, By Age Group, 2002-2014.....	29
Figure 31: Rate of Deaths from Prescription Drug per 100,000 Pop: U.S. and Missouri, 1998-2015.....	30

Figure 32: Rate of Deaths from Prescription Drug by Demographics per 100,000 Pop: MO only, 1998-2015	NOTE: Change in Scale	30
Figure 33: Estimated Past-Month Marijuana Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014		31
Figure 34: Estimated Past-Month Marijuana Use (%): In Missouri by Age Group, 2002-2014		31
Figure 35: Estimated Past-Month Other Illicit Drug Use (%): U.S. and Missouri Ages 12 and Older, 2002-2014		32
Figure 36: Estimated Past-Month Other Illicit Drug Use (%): In Missouri by Age Group, 2002-2014		32
Figure 37: Rate of Deaths from Drug Related Behavior per 100,000 Pop: U.S. and Missouri, 1998-2015		33
Figure 38: Rate of Deaths from Drug Related Overdose/Poisonings per 100,000 population: U.S. and Missouri, 1998-2010.		34
Figure 39: Rate of Deaths from Drug Related Overdose/Poisonings by Demographics per 100,000 Pop: MO only, 1998-2015		34
Figure 40: Number of Property crimes (larceny, burglary, motor vehicle theft) Reports to Police per 100,000 Pop, U.S. and Missouri, 1999-2014.		35
Figure 41: % of Persons Aged 12 or Older Reporting Dependence on or Misuse of Any Illicit Drug in the Past Year: U.S. and Missouri Ages 12 and Older, 2002-2014		36
Figure 42: % of Persons Aged 12 or Older Reporting Dependence on or Misuse of Any Illicit Drug in the Past Year: In Missouri by Age Group, 2002-2014		36
Figure 43: % of Adults Aged 18 and more Having at Least One Major Depressive Episode in the Previous Year: U.S. and Missouri , 2004-2013		44
Figure 44: % of Missourians Having at Least One Major Depressive Episode in the Previous Year: by Age Group, 2004-2013		44
Figure 45: Rate of Suicides per 100,000 Pop: U.S. and Missouri, 1998-2013		45
Figure 46: Number of Clients Served by Comprehensive Psychiatric Services, by Age Group, 2008-2013		48
Figure 47: Inpatient Hospitalizations for Affective Disorders Rates per 10,000: Residents of Missouri, Aggregate data 2012		49
Figure 48: Rate of Death due to Suicide per 100,000 Pop: U.S. and Missouri, 1998-2015.....		50
Figure 49: Rate of Deaths due to Suicide by Demographics per 100,000 Pop: MO only, 1998-2015		50
Figure 50: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked a Cigarette, 2002-2013.....		53
Figure 51: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Snuff, 2002-2013		54
Figure 52: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Chew Even Once, 2002-2013		55
Figure 53: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Smoked Pipe Tobacco, 2002-2013		56
Figure 54: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Marijuana / Hashish, 2002-2013		57
Figure 55: % of Veterans (U.S. and Missouri) & Civilians (Missouri) who have Ever Used Cocaine, 2002-2013		58
Figure 56: % of Veterans & Civilians who have Ever Used LSD, in Missouri, 2002-2013		59
Figure 57: Rate of Veteran Suicides per 100,000 Pop, in Missouri, 2005-2011		60
Figure 58: % of Veterans Who Felt Sad/Empty/Depressed for Several Days or Longer, in U.S. and Missouri, 2006-2013		61
Figure 59: % of Veterans Who Felt Sad/Empty/Depressed for Two Weeks or Longer, in Missouri, 2006-2013		62

List of Tables

Table 1: Comparison of 30 Day and Binge Drinking in Missouri, 2013-2014	13
Table 2: % of Youth who have Friends that Use Substances, 2016.....	38
Table 3: Youths' Perception of Risk of Harm from Using Substances, 2016.....	39
Table 4: % of Youth who Think The Police would Catch Substance Users in their Neighborhood, 2016.....	39
Table 5: Youths' Perception of Substance Availability, 2016	40
Table 6: Youths' Perception of Wrongfulness of Substance Use, 2016	41
Table 7: Extent of Rebellious Attitudes, 2016	41
Table 8: Youths' Perception of Parental Perception of Wrongfulness of Substance Use, 2014.....	42
Table 9: Perceptions and Attitudes toward School by Youth, 2016.....	42
Table 10: Number of Suicide Attempts in the Past Year (12 months), 2014	46
Table 11: Percent of Students Reporting Lifetime Types of Self-Harm, 2014	46
Table 12: Diagnoses of Clients Served by Psychiatric Services, 2008-2013	47
Table 13: % Having Thoughts about Committing Suicide in Missouri, By Sexual Orientation, 2014-2015.....	52
Table 14: % Feeling Sad or Depressed Often or Everyday in Missouri, By Sexual Orientation, 2014-2015	52
Table 15: Data Sources	69

Appendix A - Data Sources, Indicators and Selection Criteria

Data Sources

Table 15: Data Sources

Name of Survey	Frequency of Reporting	Mode of Data Collection	Group Surveyed	Level Data Reported
Behavioral Risk Factor Surveillance System (BRFSS)	Annual	Telephone interview	Ages 18 or older, includes veterans	National, state, and Missouri Department of Health and Senior Services planning regions
National Survey on Drug Use and Health (NSDUH)	Annual	Face-to-face interview	Ages 12 or older, includes veterans	National but can also obtain state and sub-state planning regions by combining multiple survey years
Missouri Student Survey (MSS)	Every even numbered year	Web-based at school	Grades 6th - 12th but emphasis on 9th grade	State and county
Youth Risk Behavior Survey (YRBS)	Every odd-numbered year	Paper questionnaire at school	9th through 12th	National and State
National Vital Statistics System Mortality (NVSS-M)	Annual	Death certificate data	Population level	National and State – see Appendix A for more information

Additional State Level Data Sources:

Data Subject: Maternal drinking during pregnancy

Data Source: Missouri Department of Health & Senior Services

Report Name: Missouri Vital Statistics

Report Frequency: Annual

Record Source: Birth certificates

Recording Method: Check box

Data Strengths: Birth certificate data are collected for every live birth. Missouri has reciprocal reporting arrangements with most other states, so out-of-state births to Missouri residents are included. Beginning in 1989, medical condition information on birth records is collected using check boxes rather than the previous open-ended questions. The use of check boxes increased reporting of medical risk factors by 50 percent in 1989 compared to 1988.

Data Limitations: Drinking during pregnancy is substantially under-reported in the birth records. In 2007 and 2008, the Missouri Pregnancy Risk Assessment Monitoring System (PRAMS), administered a mailed stratified random sample survey to mothers of Missouri newborns. The survey found that 5.8 percent of mothers acknowledged drinking alcohol in the last three months of their pregnancies. The 95% confidence interval for that estimate is 4.6%-6.9%. Due to likely under-reporting on the survey, the actual drinking rate is probably higher than the survey estimate. During the same two-year period, birth records indicated 484 births in 2007 and 416 in 2008 involved maternal drinking during their pregnancies--a two-year total of 900 among 162,825 live births and a rate of only 0.55 percent. Thus, the actual rate of maternal drinking during pregnancy is probably at least 10 times the rate reported in the birth records.

Data Subject: Maternal smoking during pregnancy

Data Source: Missouri Department of Health & Senior Services

Report Name: Missouri Vital Statistics

Report Frequency: Annual

Record Source: Birth certificates

Recording Method: Check box

Data Strengths: Birth certificate data are collected for every live birth. Missouri has reciprocal reporting arrangements with most other states, so out-of-state births to Missouri residents are included. Beginning in 1989, medical condition information on birth records is collected using check boxes rather than the previous open-ended questions. The use of check boxes increased reporting of medical risk factors by 50 percent in 1989 compared to 1988.

Data Limitations: Smoking during pregnancy is under-reported in the birth records. In 2007 and 2008, the Missouri Pregnancy Risk Assessment Monitoring System (PRAMS), administered a mailed stratified random sample survey to mothers of Missouri newborns. The survey found that 20.1 percent of mothers acknowledged smoking in the last three months of their pregnancies. The 95% confidence interval for that estimate is 18.2%-22.0%. During the same two-year period, birth records indicated 14,533 births in 2007 and 14,211 in 2008 involved maternal smoking

during their pregnancies--a two-year total of 28,744 among 162,825 live births and a rate of 17.65 percent. Thus, the actual rate of maternal smoking during pregnancy is probably higher than the rate reported in the birth records.

Data Subject: Juvenile court out-of-home placements of children due to parental substance use / abuse (categorized according to parental alcohol use, drug use, or alcohol and drug use).

Data Source: Missouri Department of Social Services

Report Name: Unpublished report

Report Frequency: Provided annually to recipient requesting agency

Record Source: Statewide Automated Child Welfare Integrated System (SACWIS)

Recording Method: Information requested but not available as of the date the report is to be submitted.

Data Subject: Alcohol-involved traffic crashes (categorized as fatal, non-fatal, and non-injury crashes) and injuries (categorized as fatalities and non-fatal injuries)

Data Source: Missouri Department of Public Safety, State Highway Patrol, Statistical Analysis Center

Report Name: Unpublished report

Report Frequency: Provided annually to recipient requesting agency

Record Source: Missouri Uniform Accident Report

Recording Method: Check box

Data Strengths: Uniform Accident Report has a check box for alcohol as a probable contributing circumstance, based on the judgment of the investigating officer. There are check boxes for alcohol involvement for drivers and passengers. Data have been collected for many years. Data can be amended if Blood Alcohol Content (BAC) testing later indicates the offer was incorrect in their initial assessment; this is most often done in electronic records (approximately 1/3 of all reports are electronic).

Data Limitations: The check box system is not based on an objective method or a specific BAC threshold to determine whether alcohol contributed to the crash. The classification of alcohol involvement is different than the .01+ percent BAC criteria used by the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS).

Data Subject: Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, and Straight Allied (LGBTQ) students in Missouri's schools

Data Source: Missouri GSA Network

Report Name: The 2014-2015 Missouri GSA Network's Missouri School Climate Survey (MSCS)

Report Frequency: Biennially

Record Source: Missouri School Climate Survey: The Experiences of Lesbian, Gay, Bisexual, Transgender, Queer, Questioning and Straight Allied (LGBTQ) Students in Missouri's Schools. Missouri: Missouri GSA Network. Retrieved from <http://www.mogsanet.dreamhosters.com/wp-content/uploads/2012/12/2015MSCSAnalysis.pdf> and used with permission.

Recording Method: Check box

Data Strengths: The 2013 Missouri GSA Network's Missouri School Climate Survey (MSCS) is the first statewide survey to document the experiences of the students who identify as lesbian, gay, bisexual, transgender, queer, questioning, and straight ally (LGBTQ) in Missouri's secondary schools from local efforts. The Missouri School Climate Survey fills a crucial void in our collective understanding of the contemporary high school experience. This survey is the only one of its kind to collect this information in Missouri.

Data Limitations: The sample size for LGBTQ students was small, making it difficult to do group comparisons. Because this is the first to collect this type of information in Missouri, conclusions regarding changes across time cannot yet be drawn.

Data Selection

For the last 16 years, DBH (formerly ADA) has produced an annual Status Report with data on alcohol and drug use across the state. This report includes data from national surveys as well as some local data where available. This historical data collection, in combination with the indicators listed in the guidance document, led to the choice of indicators covered. NSDUH was chosen as the primary data source (where available) over BRFSS due to its historical use in Missouri. However, when BRFSS data are used, data by gender are included, as that is not available in NSDUH.

Similarly, Missouri State Highway Patrol (MSHP) data were used instead of NHTSA. Traditionally, these were used as MSHP only reports those known to have alcohol involvement while NHTSA attempts to estimate the percentage that were alcohol related from the pool of unknown.

Where State Epidemiological Data System (SEDS) data were not available, local sources were used to provide some information on the indicator, although they may not be as valid or reliable.

Mortality Data

Note that the following ICD-10 codes were used to define the mortality categories. Data can be queried at <http://wonder.cdc.gov/ucd-icd10.html>.

Cardiovascular and Ischemic Cerebrovascular Disease	I20–I25 and I60-69, I00-I09, I11, I13, I26-I51(exclude I32, I39, I41)
Chronic Liver Disease & Cirrhosis	K70, K73-K74
COPD And Emphysema	J43-J44
Drug Related Behavior	F11- F16, F18-F19, F55 and G62
Drug Related Poisoning	X40-X44, X46, X60-X64, X66, Y10-Y14 and Y16
Homicide	X85-Y09 and Y87.1
Lung Cancer	C34
Suicide	X60-X84 and Y87.0
Prescription Drugs	T36-T39, T40.2-T40.4, T41-T43.5, and T43.8-T50.8 [prescription OPR (T40.2-T40.4), benzodiazepines (T42.4)]